VISIT…

1 (Now they know how many holes it takes to fill) The L-Bert Hall

Puzzle Goal: **A 3x3x3 assembly puzzle, based on the nine L-tricubes with 9 identical pieces and a unique solution.**

Materials: Wood: cocobolo, jacarunda pardo and birch.

Classification: Slocum: 1.2 // Hordern Dalgety: ASS-CART

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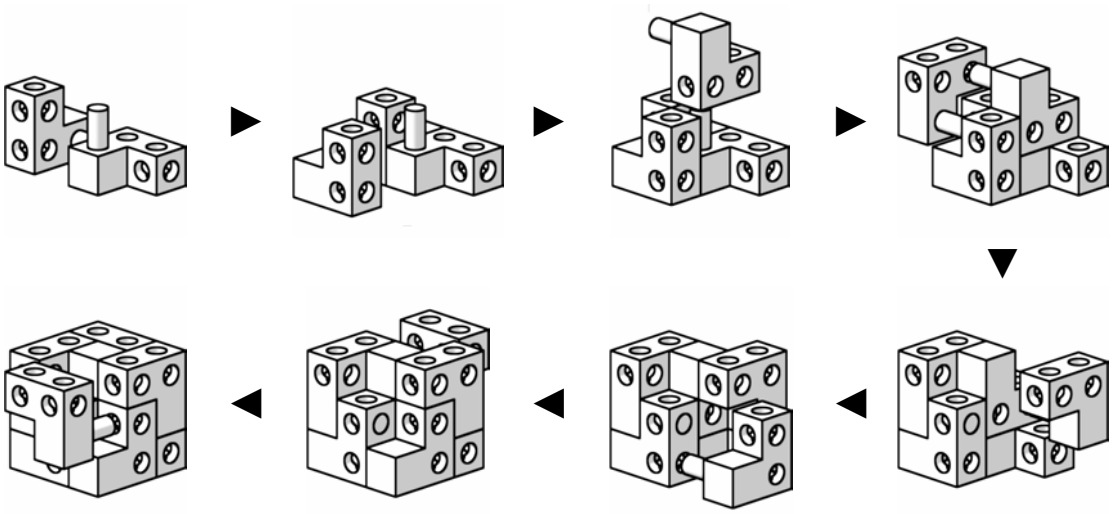
1 (Now they know how many holes it takes to fill) The L-Bert Hall

Puzzle Solution:



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2

5H

Puzzle Goal: **Fit all 14 bowties into the box.**

Materials: ABS plastic

Classification: Slocum--6.4 Miscellaneous Dexterity Puzzles

Notes: This puzzle is actually a demonstration of a space filling object. Each object is made up of four pyramids which have transverse sections of regular pentagons. The way that 12 fit together at an apex is that of the regular dodecahedron, not that of the rhombic dodecahedron.

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5H

Puzzle Solution:

Practice!

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3

Baby Duck Case

Puzzle Goal: **Place five duck pieces flat in the two frames.**

Materials: MDF board

Classification: 2D put-together

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3 Baby Duck Case

Puzzle Solution:

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4 Bevel Cube

Puzzle Goal: **Scramble first, and then restore all the faces, like Rubik's Cube.**

Materials: ABS resin

Classification: Sequential Movement Puzzles

Notes: There are three geometric elements of a cube: the face, the vertex, and the edge.

When the faces turn it's a Rubik's Cube; when the vertices turn it's a Skewb; and when the edges turn it's the Bevel cube!

Rotations besides 180 degrees are possible, allowing very unexpected movement and shapes.

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4 Bevel Cube

Puzzle Solution:

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5 Bird in the Nest

Puzzle Goal: **Let the little bird out of the nest.**

Materials: Wood (wenge, bubinga, and beech)

Classification: Take apart puzzle.

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5 Bird in the Nest

Puzzle Solution:

Push simultaneously on three triangle-form elements.

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6

Blue Balls

Puzzle Goal: **Interlock all eight pieces.**

Materials: ABS and Acrylic

Classification: Slocum 3.2 Interlocking Geometric Shapes

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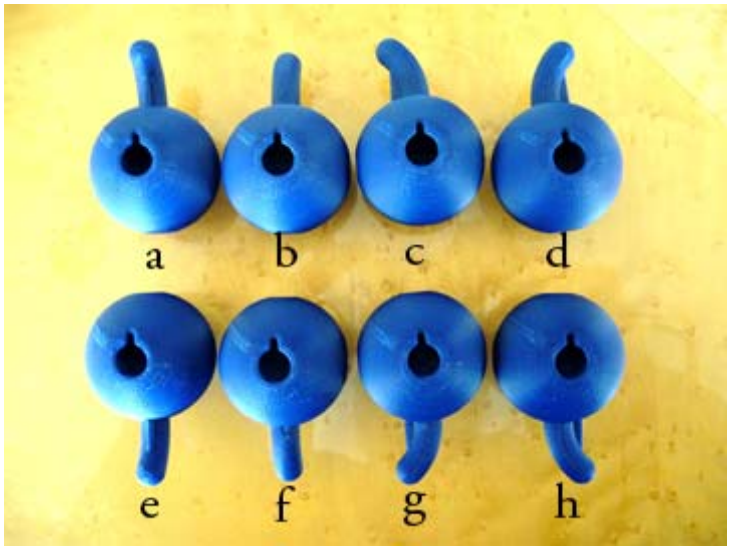
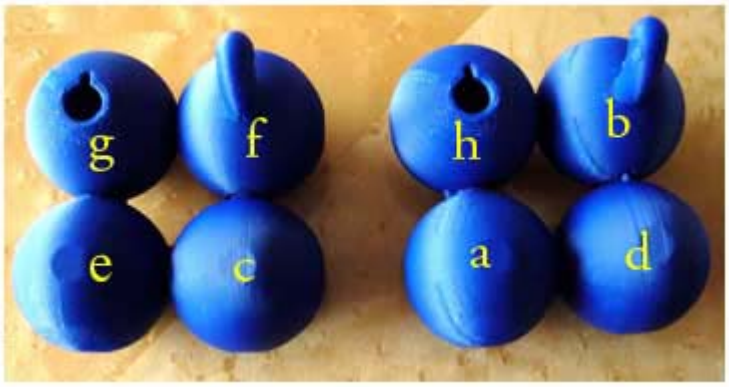
6 Blue Balls

Puzzle Solution:

All 8 balls are different and are labeled:



This is one of two solutions:
(you have to put the two halves together)



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7

Bolted Cage

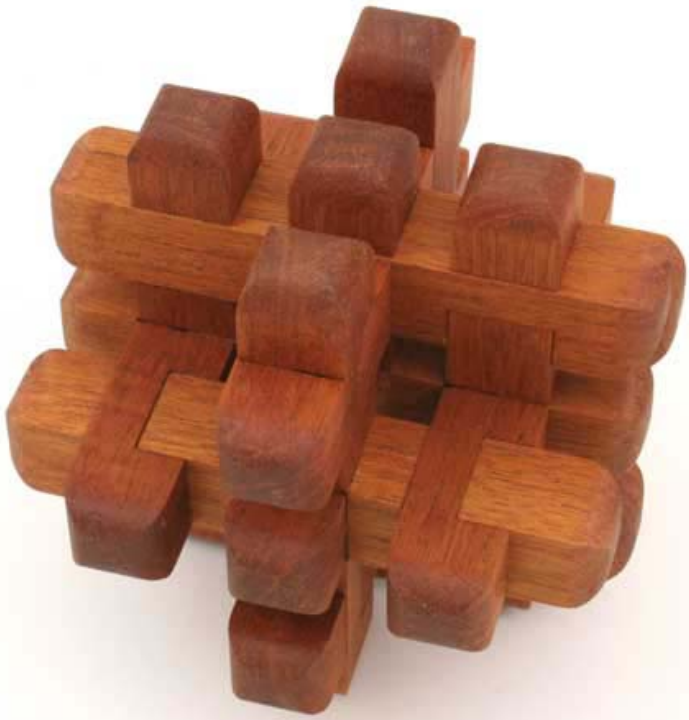
Puzzle Goal:

1. Remove the four lock pieces.

2. Disassemble and reassemble the puzzle.

Materials: Mahogany

Classification: 3D Interlocking



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7 Bolted Cage

Puzzle Solution:

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8

Cast Loop

Puzzle Goal: **Assemble the two pieces to form a loop.**

Materials: Zinc alloy

Classification: Slocum - 3.2 Interlocking geometric shapes

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8 Cast Loop

Puzzle Solution:

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9

Cheese and Mouse

Puzzle Goal: **Put the mouse (circle) in the box with cheese.**

Materials: Wood (oak and bubinga)

Classification: Put-together (2-D Packing problem).

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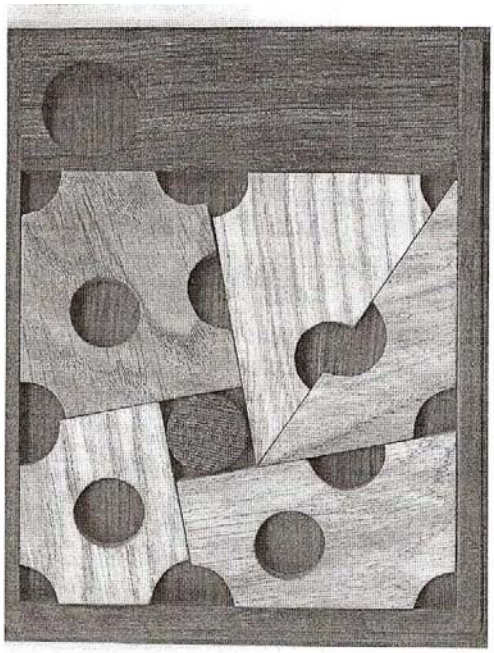
9 Cheese and Mouse

Puzzle Solution:



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10 Chinese Rings Handle

Puzzle Goal: **Completely remove the blue rope.**

Materials: Birch wood and polyester rope

Classification: Disentanglement

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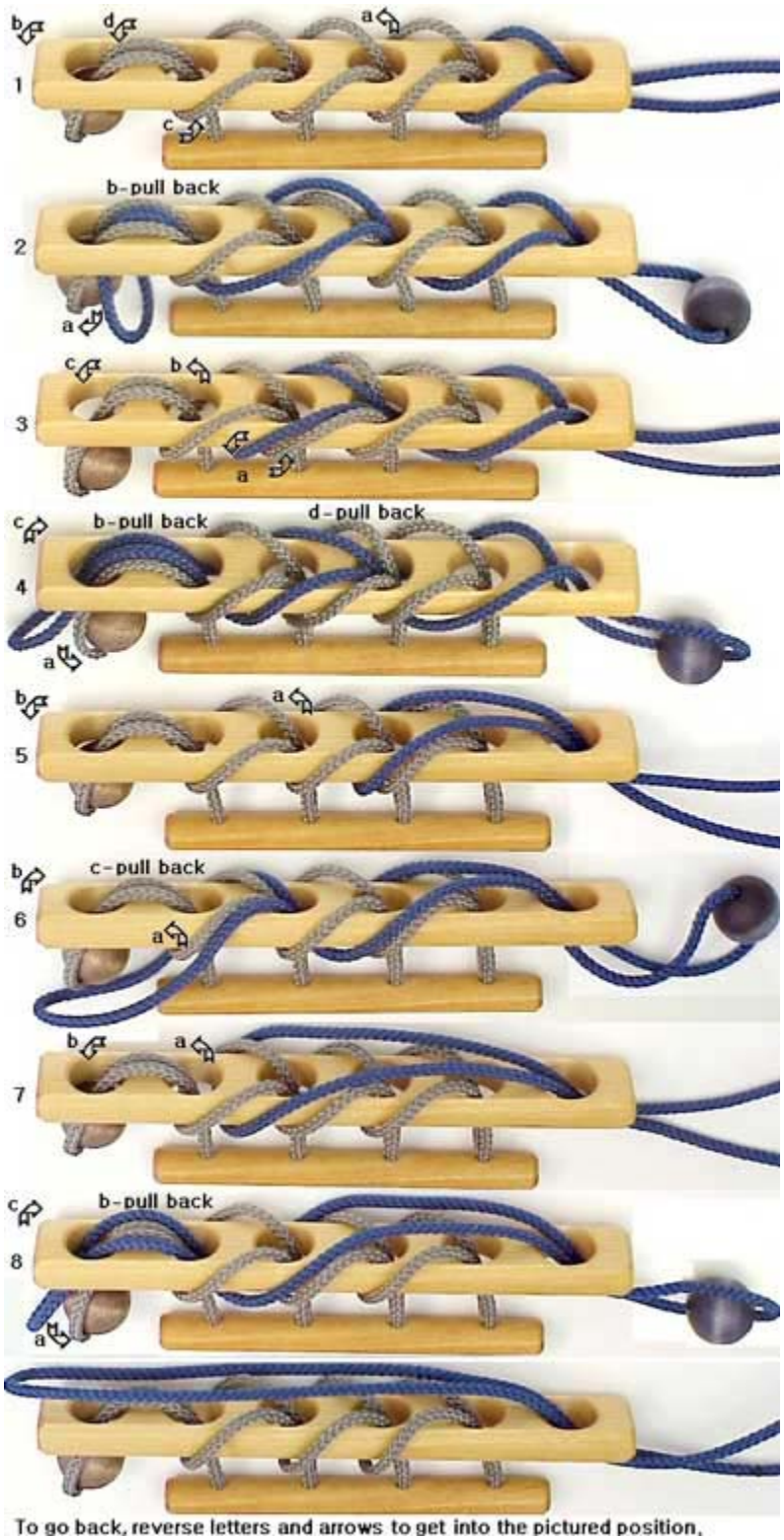
10 Chinese Rings Handle

Puzzle Solution:



To go back, reverse letters and arrows to get into the pictured position.

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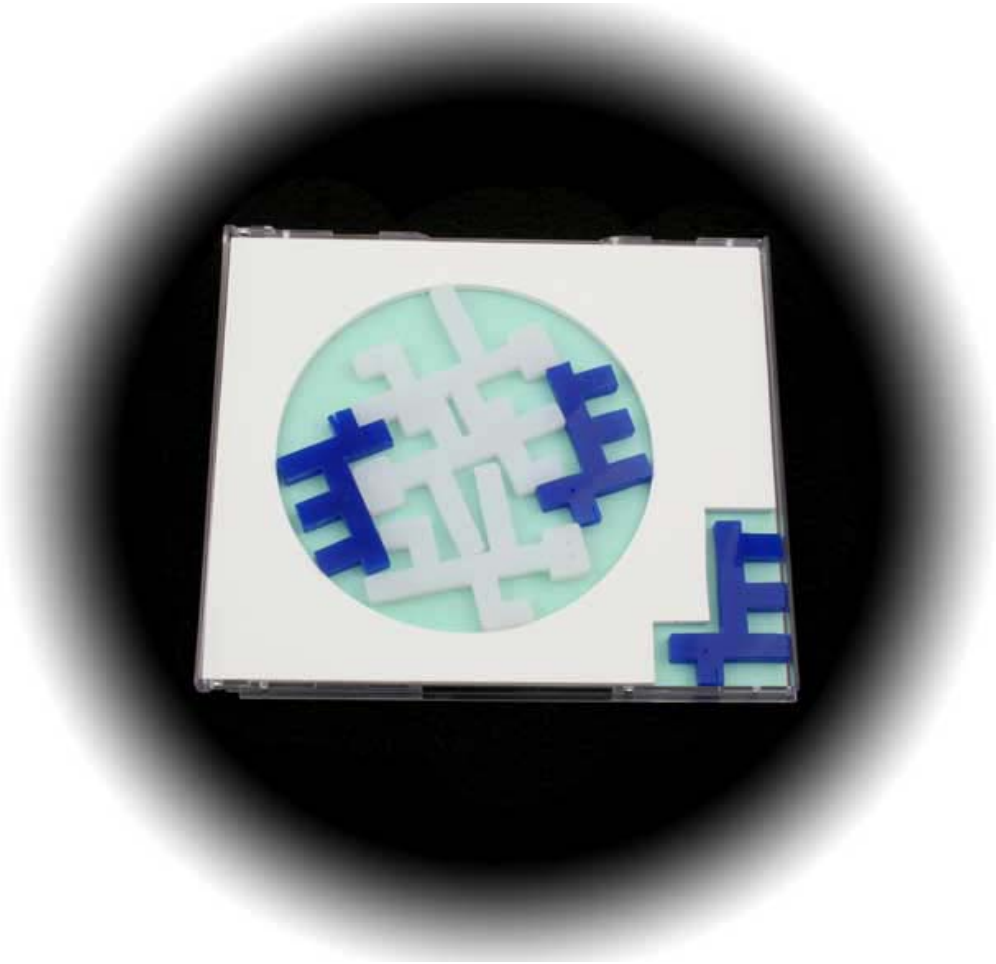
11 Companions

Puzzle Goal: **Pack the three men and the three dogs flat in the tray.**

Materials: Plastic pieces and case.

Classification: Packing



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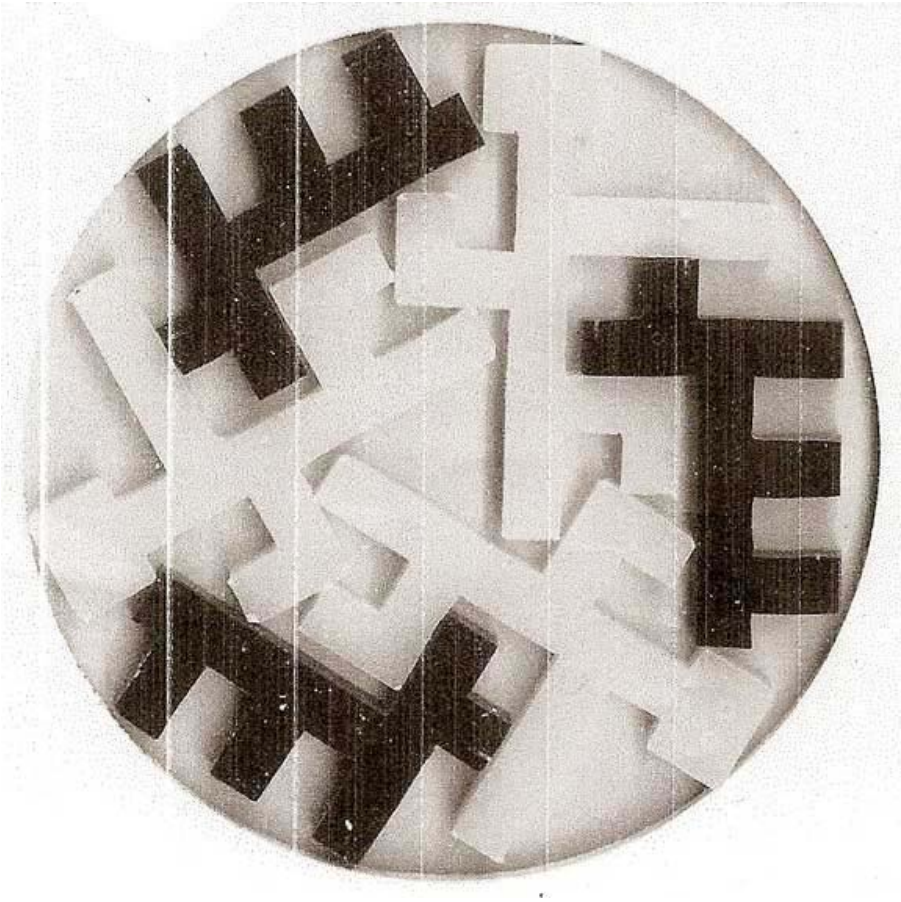
11 Companions

Puzzle Solution:



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12

Cross Box

Puzzle Goal: **Open both secret compartments by manipulating the wooden blocks within the cage.**

Materials: Bloodwood, beli, puprleheart, magnets

Classification: sequential movement

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12 Cross Box

Puzzle Solution:

The puzzle cage contains a "special" block that can be distinguished from all others by a small inlayed dot in the middle of each of its sides. Similar dots can also be located in different areas along the base of the cage. A secret compartment in the base of the puzzle will slide open when this special block is directly above the inlayed dots found on the corner of the cage.

Manipulating the special block into this corner position can be accomplished by continually moving the other blocks out of its way until it arrives in its desired location. This process is impeded by a small peg on each block that either allows or blocks the movements of all blocks that surround it, depending on the orientation of adjoining grooves. All blocks in the cage are identical, so the groove orientation of sides that cannot be seen can still be determined by examining the exposed sides of each block.

Once the "special" block is moved to its corner position, the secret compartment in the base can be pushed out. At this point, a second secret compartment can also be revealed. Leave the first compartment open and manipulate the "special" block through the cage so that it is directly above the inlayed dot found in the middle of the cage base on the opposite side of the puzzle. (Take care not to let the drawer accidentally slide shut while doing this.) When accomplished, the drawer can be pulled out a few more inches to reveal a second compartment. The locking mechanism for the box will instantly reset as soon as the drawer is fully closed.

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13 Cubature of the Ball

Puzzle Goal:

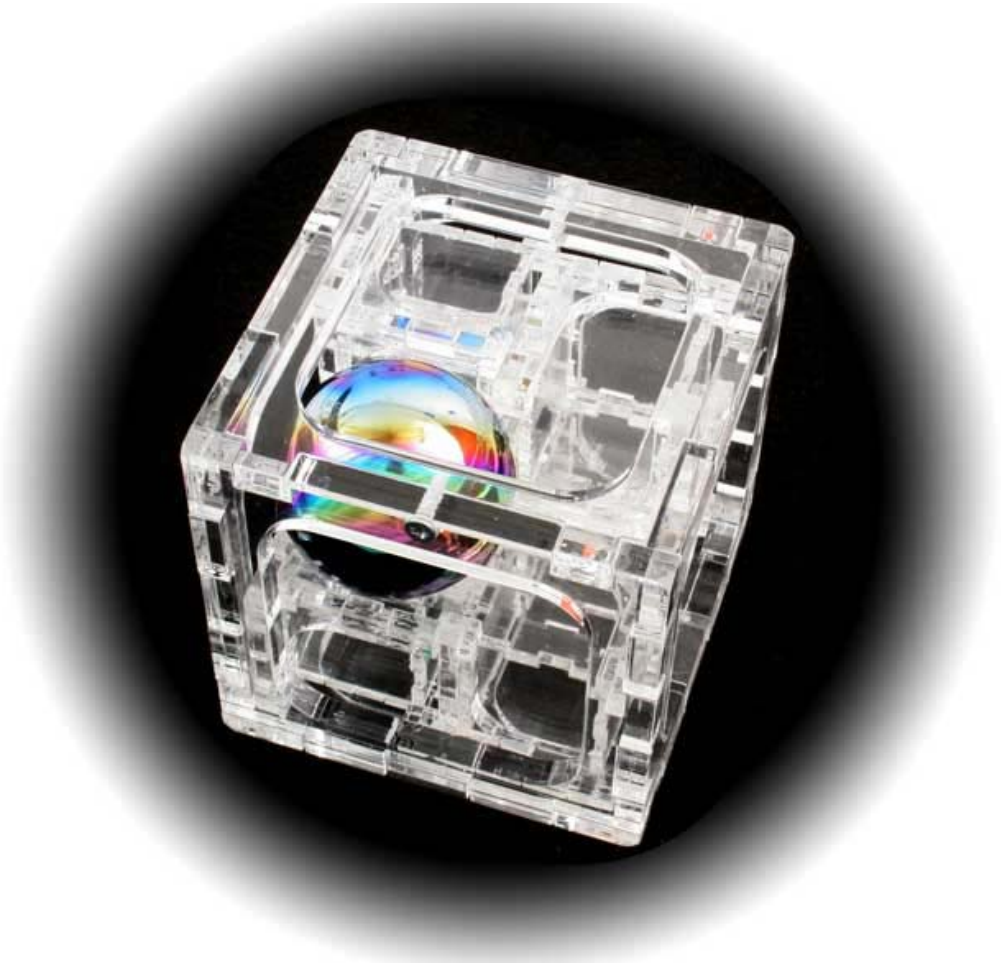
Remove the ball.

The cage surrounds eight segments. One segment is empty and the other 7 are filled with 6 identical cubes and one ball. The ball is constrained by the grooves in the cubes and the cage. Aside from this constraint, the ball and the cubes are free to move. The puzzle is a sliding maze where the map changes as the cubes are moved.

If the ball is removed, the goal is then to get the ball into the segment diagonally opposite the entrance.

Materials: Plexiglas

Classification: SEQUENTIAL MOVEMENT PUZZLES (SEQ)



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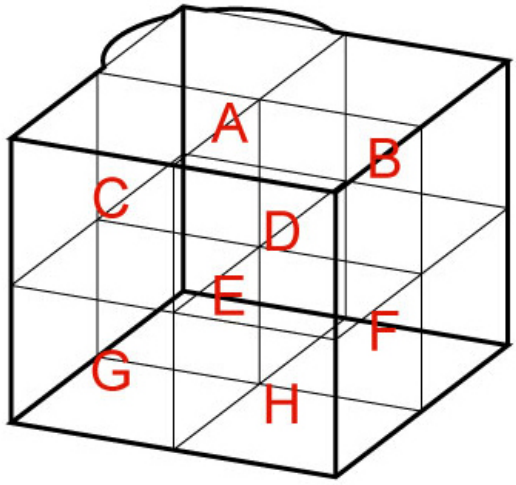
13 Cubature of the Ball

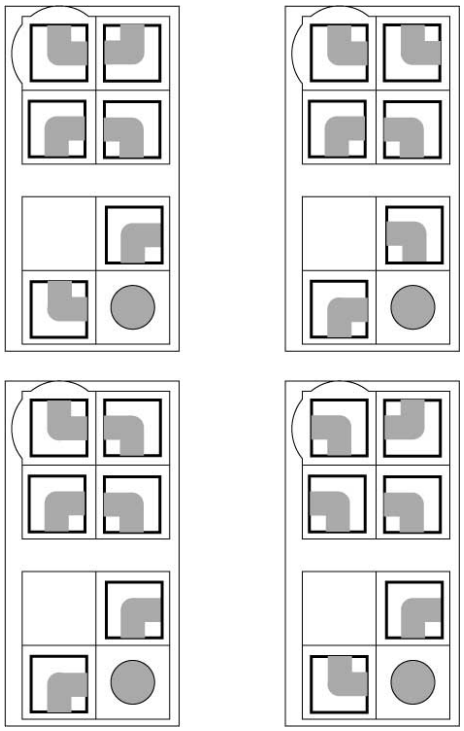
Puzzle Solution:



Sequence of positions which element should be moved to the free space (starting position is the first of those shown below):

F,H,G,C,A,B,F,H,G,C,A,B, get the ball out.

To reset puzzle in a new challenge, use a screwdriver to open the bottom of the cage and arrange the parts according to one of the four starting diagrams below (the "exit" layer is show with the exit face up and in the upper left corner, as shown; the other layer is show with the exit face down, and oriented in the upper-left corner); the ball will start opposite the exit position. All six cubes are the same and have only four distinct orientations. In order to place each cube in its correct orientation, it is enough consider only view of its top.



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14

Cubicle Puzzle

Puzzle Goal: **Undo the five main pieces.**

Materials: Mahogany

Classification: Interlocking: 3.2

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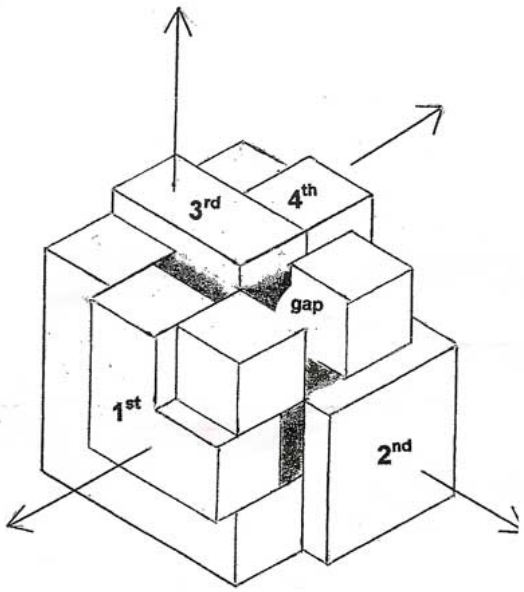
14 Cubicle Puzzle

Puzzle Solution:

Find loose middle edge cube. Take it out.

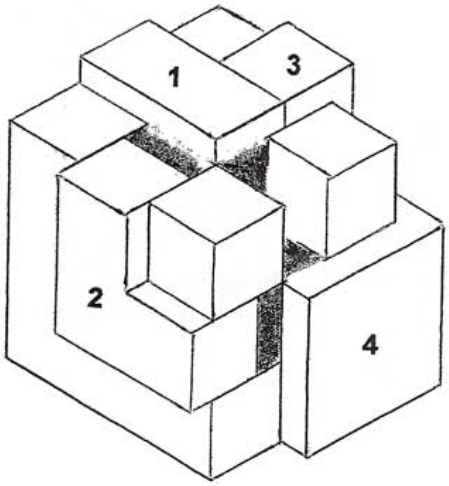
Orient the cube so gap is in position as in the picture.

1. A 3-cube L shape slides out a little.
2. A 4 cube square slides out a little.
3. A 2 cube piece slides out a little.
4. A 3 cube thin rectangle slides out totally.1st piece needs 90 degree turn to exit.



To re-make puzzle:

1. Place 1 and 2 loosely in position.
2. Piece 2 needs an anti-clockwise quarter turn in "out" position.
3. Piece 3 is placed loosely.
4. Then piece 4 (corner cube goes in corner)
5. Push pieces in order: 3, 1, 4, 2.



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15

Dé-Mateo

Puzzle Goal: **Put together and take apart.**

Materials: ABS, 3d Printer

Classification: INT-POLY, Interlocking polyhedral 3d

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15 Dé-Mateo

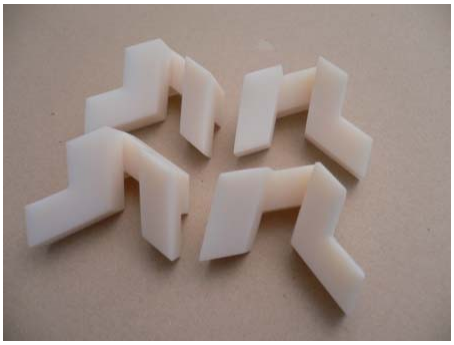
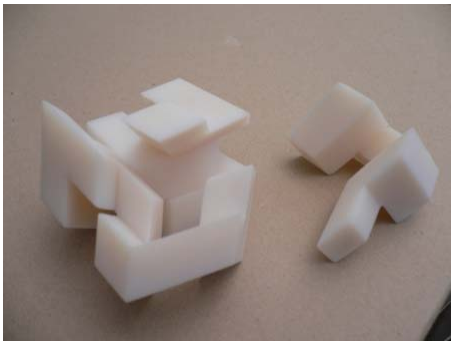
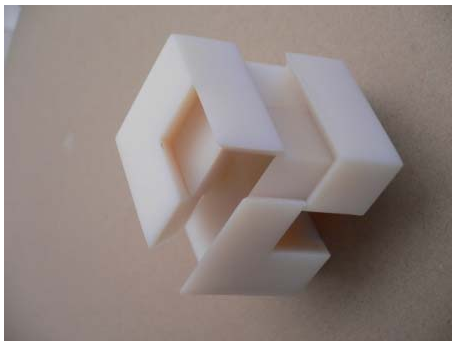
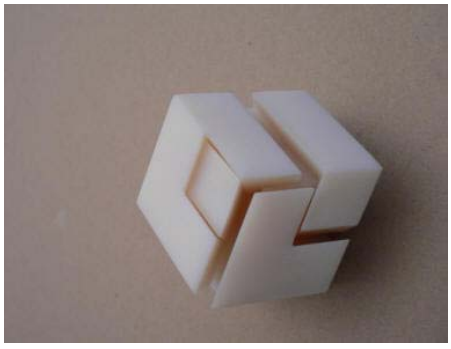
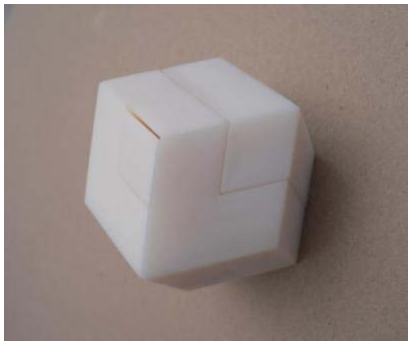
Puzzle Solution:

Put-together

You have to arrange the 4 pieces in there relative positions, and then slides them together simultaneously.

Take-apart

You have to push the four small diamond-shapes together simultaneously.

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16 Diamond Star

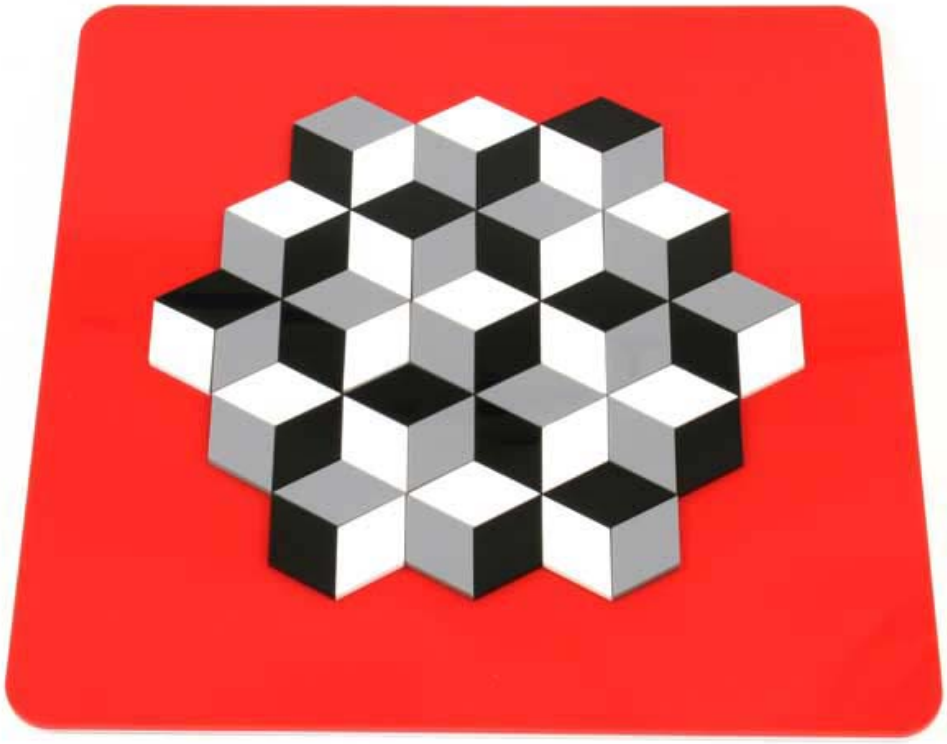
Puzzle Goal:

1. **Assemble pieces with no two of the same color share sides.**
2. **Assemble all pieces into a long (8x3x3), color-separated convex hexagon.**
3. **Assemble 22 pieces to form a color-separated elongated (5x4x4) convex hexagon.**
4. **Assemble 20 pieces to form a color-separated convex equilateral hexagon.**

Materials: Laser-cut acrylic tiles in a red acrylic tray, with wavy hexagon inset, 23 tiles with total area of 57 diamonds, hand-inlaid with white, black and gray diamonds in star-like patterns.

Classification: Put-together plus non-matching.

Notes: The periodic pattern of two-color stars embedded in hexagons of a third color was originally conceived as the basis for a game board.



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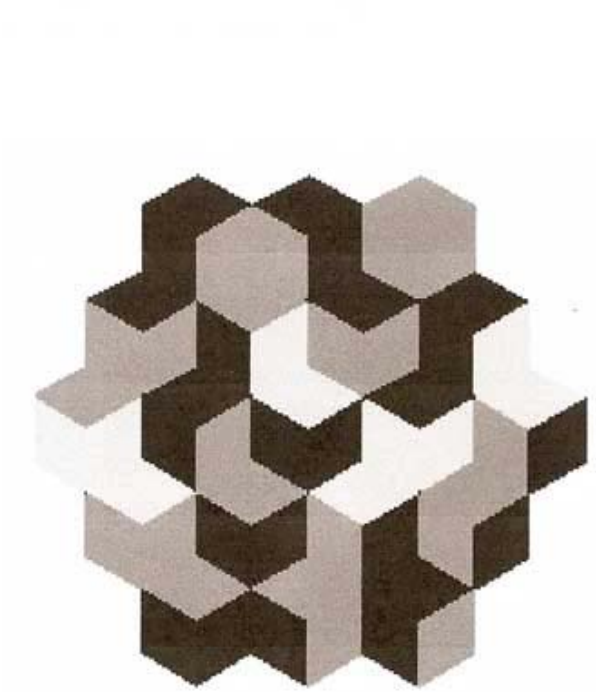
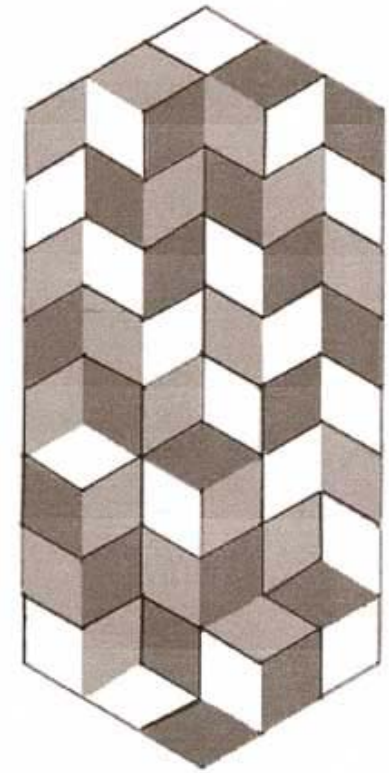
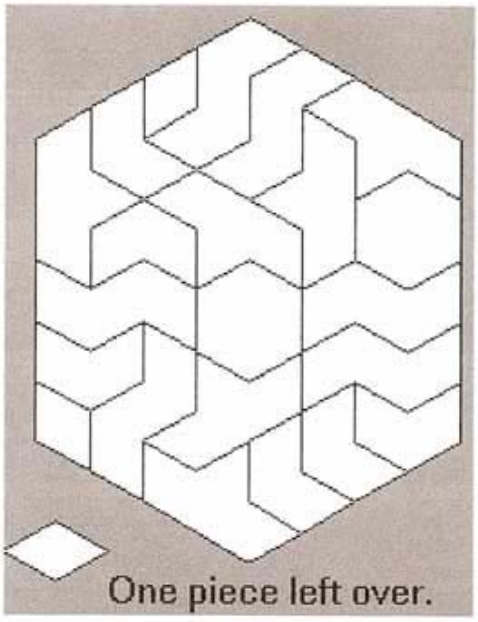
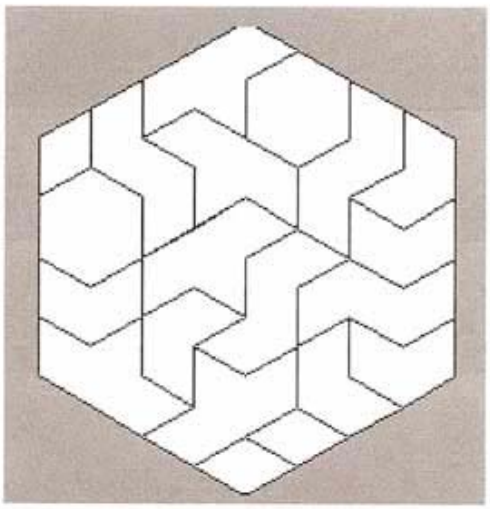
16 Diamond Star

Puzzle Solution:









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17 Dice on a String

Puzzle Goal: **Slide the dice together to form a 3x3x3 cube. 26 dice are connected by a string; place the extra die in the middle where the string must cross twice.**

Materials: Plastic dices and (minor) flexible colorful string

Classification: Folding puzzle FOL (Dalgety)

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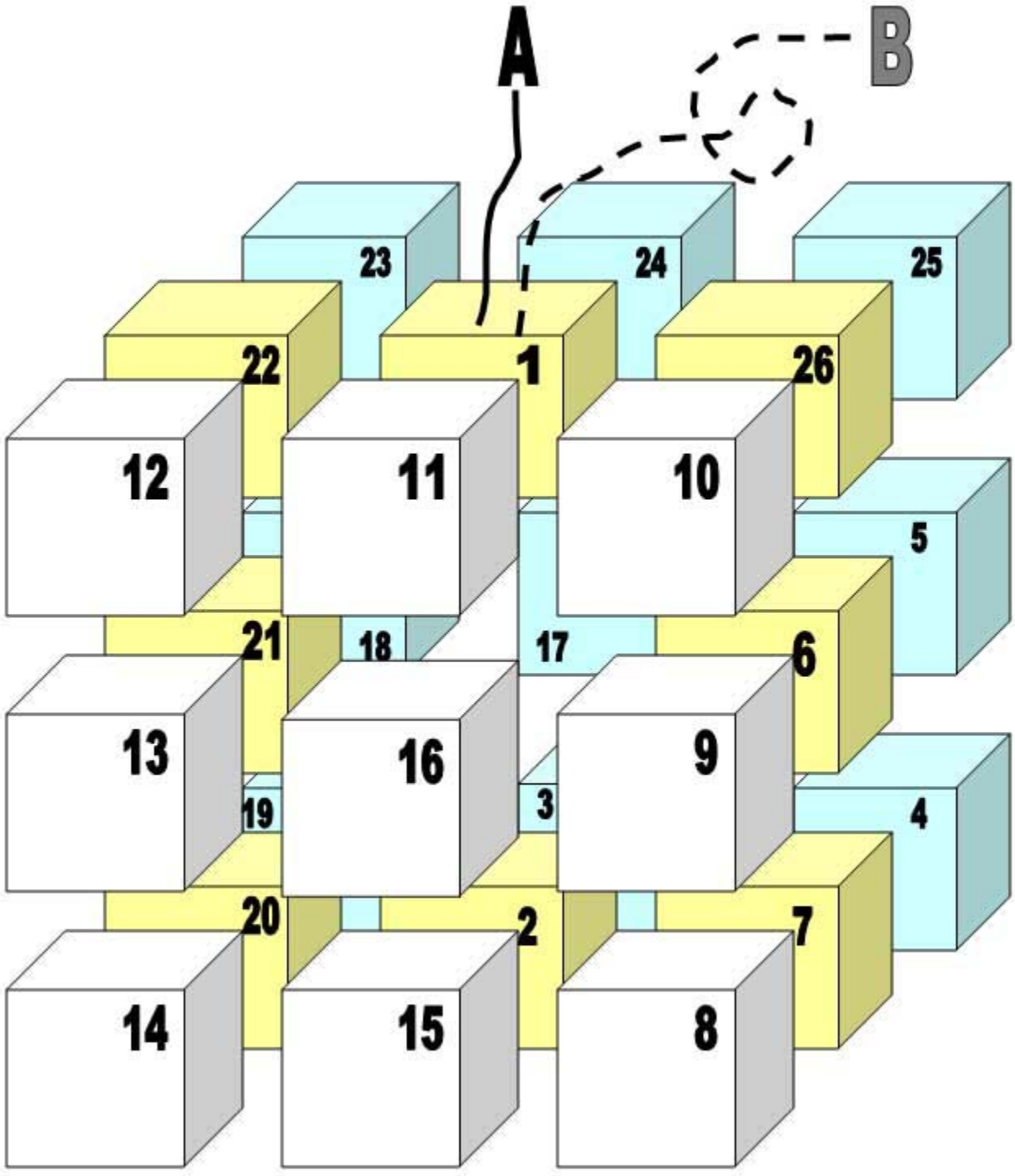
17 Dice on a String

Puzzle Solution:

Follow string A-1 up to 26—all the way to B, the fit the extra die at the center crossing.



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18

Digits in a Box

Puzzle Goal: **Fit all ten pieces into the box and close the lid.**

Materials: Pieces: machined aluminum
Box: pine or poplar

Classification: Polyform, Packing

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18 Digits in a Box

Puzzle Solution:

One of over 4000 solutions:

```
78000 78020 78020 78020 78000
78444 ...2. 383.3 2.222 68666
784.. 78.21 38323 28222 686.6
44444 11111 33333 22222 66666
666.. 1.621 6662. 6.62. 666..
```

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19

Dinghy

Puzzle Goal: **First, remove the chain from the wire part without unclasping the chain. Then, return it to the starting position.**

Materials: Wire and chain.

Classification: Disentanglement (Wire-and-String Puzzle)

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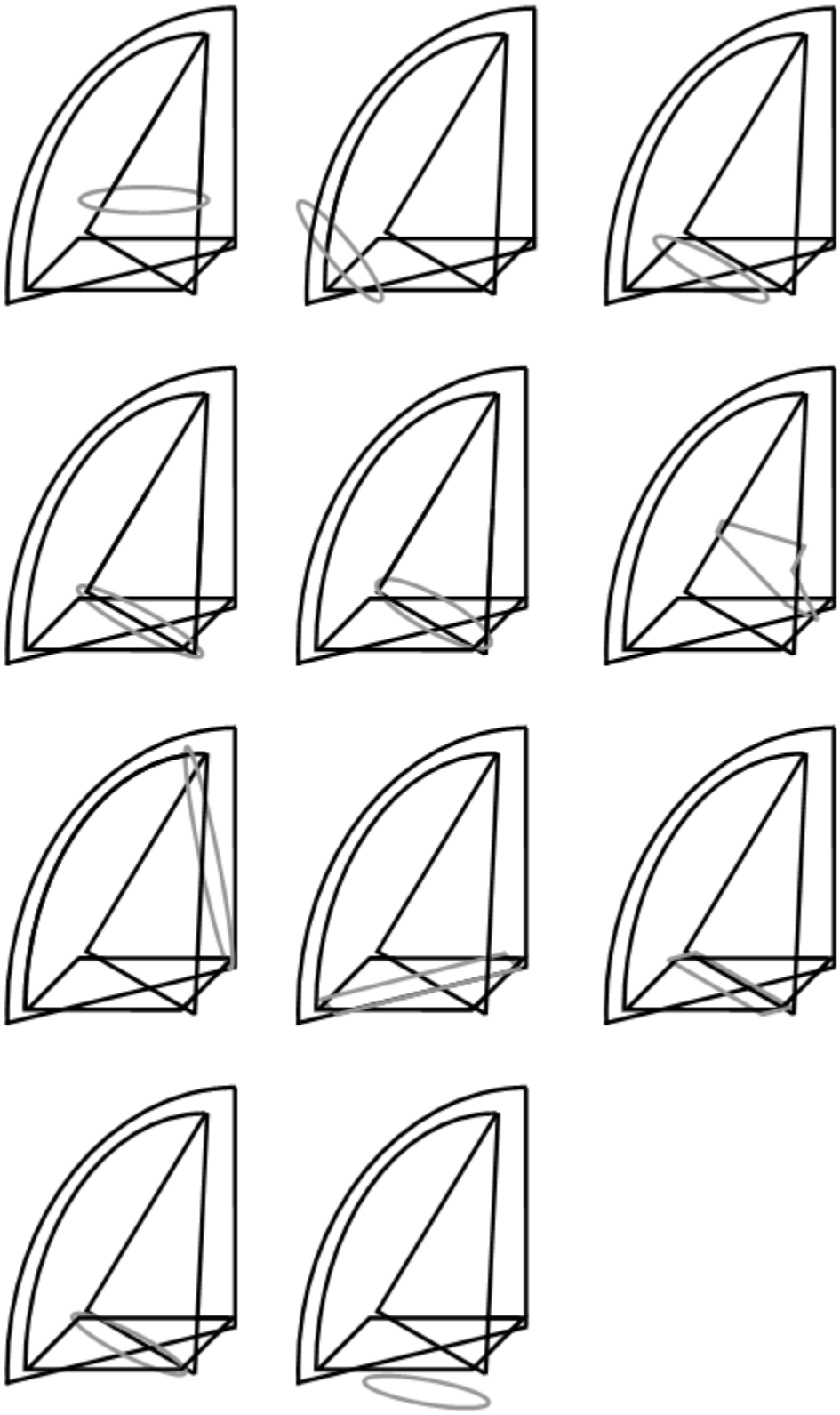
19

Dinghy

Puzzle Solution:



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20

Dissection634

Puzzle Goal: **You can make a hexagon, a triangle and a square out of all 12 pieces.**

Materials: Natural Wood coated MDF

Classification: Put Together

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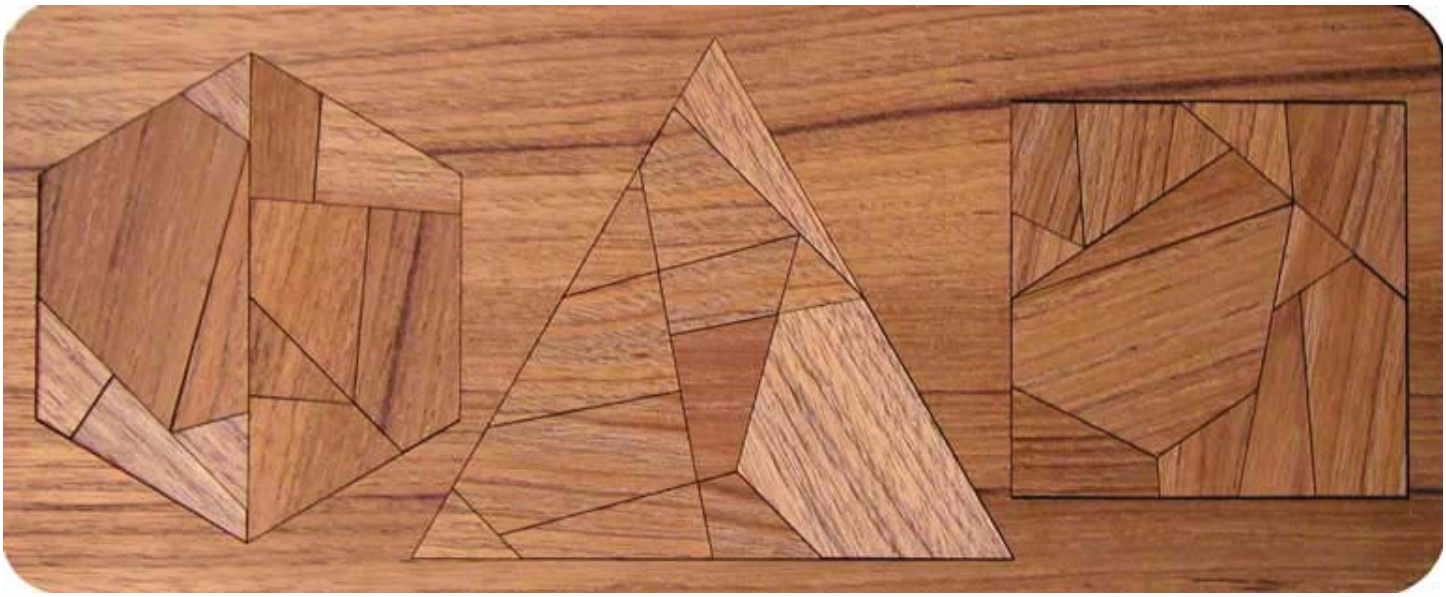
20 Dissection634

Puzzle Solution:



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21

Duodeciburr

Puzzle Goal: **Find two different ways to assemble the 12 pieces using coordinated motion.**

Materials: Plum

Classification: Interlocking puzzle

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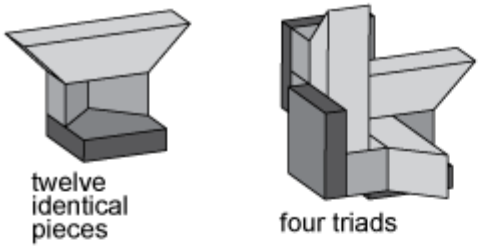
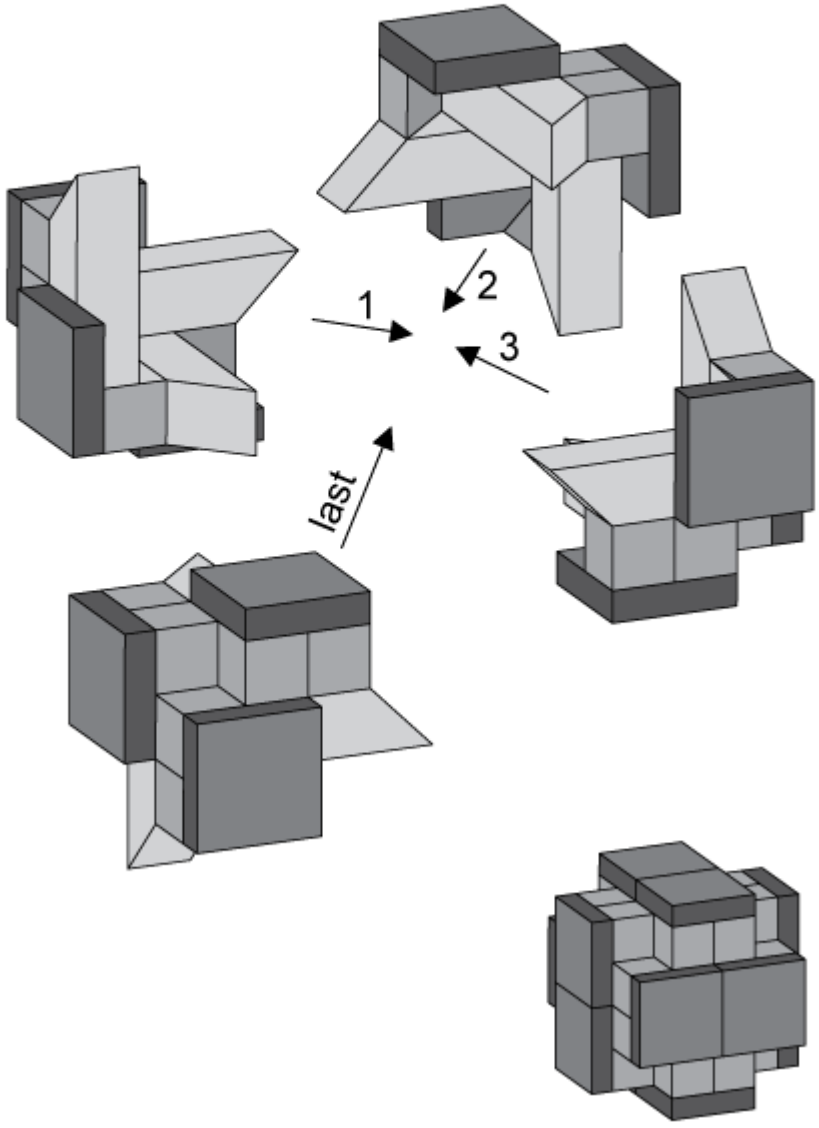
21 Duodeciburr

Puzzle Solution:

There are twelve identical pieces with two different coordinated motions among four triads. These four triads can be made in either a "left-handed" or a "right-handed" way.





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22 Fall Tower

Puzzle Goal: **There are 6 problems of increasing difficulty. In each problem, the goal is to construct a tower of the indicated blocks, placing them end to end so that all visible and adjacent surfaces match in either color or shape. A tower may have a single block lying flat as a base, or have a base of two vertical blocks. All tower blocks not a part of the base will have both ends adjacent to other blocks. The tower must be able to stand without support.**
Problem a) Use blocks 1256
Problem b) Use blocks 14567
Problem c) Use blocks 12456
Problem d) Use blocks 123567
Problem e) Use blocks 234567
Problem f) Use all blocks to form a tower

Materials: Maple with acrylic

Classification: put together

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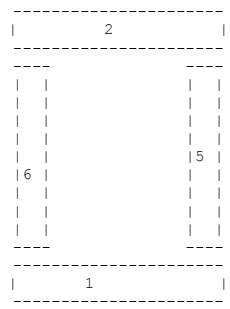
22 Fall Tower

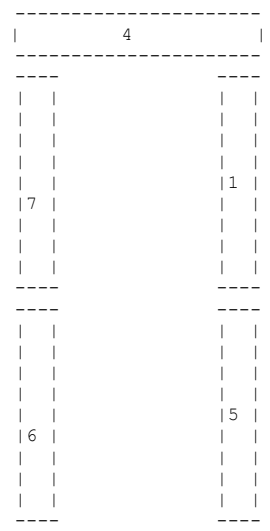
Puzzle Solution:

A) Blocks 1256



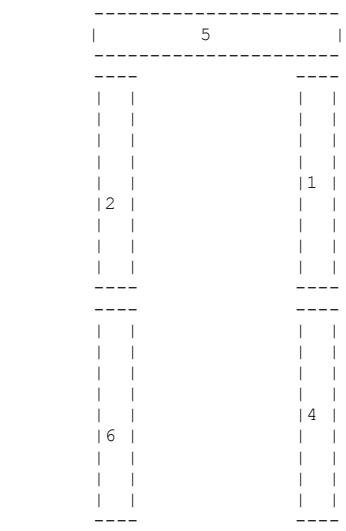
Block 2 green oak facing up, brown oak facing down
Block 6 green elm facing left, brown maple facing right
Block 5 orange oak facing left, green maple facing right
Block 1 orange maple facing up, orange poplar (hidden) facing down

B) Blocks 14567



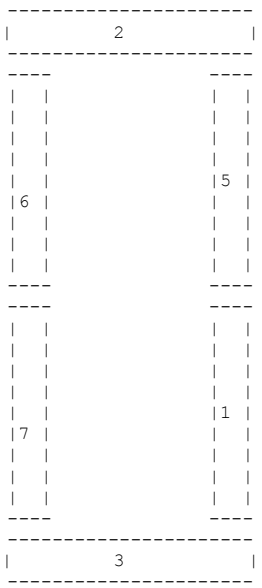
Block 4 red poplar facing up, red maple facing down
Block 7 brown poplar facing left, red elm facing right
Block 1 orange maple facing left, orange poplar facing right
Block 6 brown maple facing left, green elm facing right
Block 5 green maple facing left, orange oak facing right

C) Blocks 12456



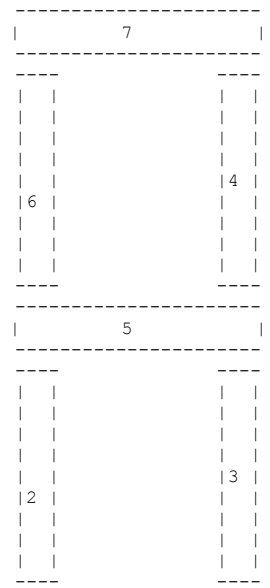
Block 5 green maple facing up, orange oak facing down
Block 2 green oak facing left, brown oack facing right
Block 1 orange poplar facing left, orange maple facing right
Block 6 green elm facing left, brown maple facing right
Block 4 red poplar facing left, red maple facing right

D) Blocks 123567



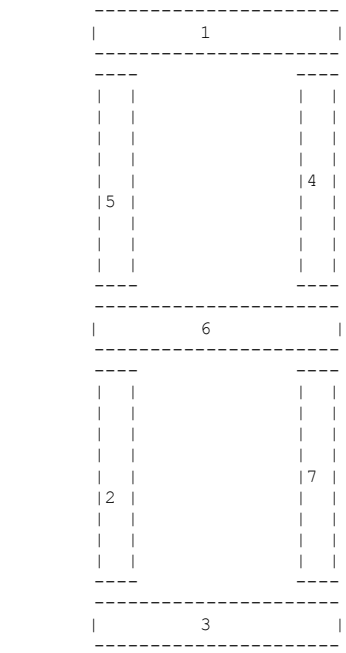
Block 2 brown oak facing up, green oak facing down
Block 6 brown maple facing left, green elm facing right
Block 5 green maple facing left, orange oak facing right
Block 7 brown poplar facing left, red elm facing right
Block 1 orange maple facing left, orange poplar facing right
Block 3 orange elm facing up, red oak (hidden) facing down

E) Blocks 234567



Block 7 brown poplar facing up, red elm facing down
Block 6 brown maple facing left, green elm facing right
Block 4 red maple facing left, red poplar facing right
Block 5 green maple facing up, orange oak facing down
Block 2 brown oak facing left, green oak facing right
Block 3 orange elm facing left, red oak facing right

F) Use all blocks to form a tower



Block 1 orange poplar facing up, orange maple facing down
Block 5 orange oak facing left, green maple facing right
Block 4 red maple facing left, red poplar facing right
Block 6 brown maple facing up, green elm facing down
Block 2 brown oak facing left, green oak facing right
Block 7 red elm facing left, brown poplar facing right
Block 3 red oak facing up, orange elm (hidden) facing down

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23 Football Downunder

Puzzle Goal: **Ten move puzzle box. Lid is the part with the shoelaces (opposite the map of Australia), it slides off to open; no force needed.**

Materials: Australian woods, pins magnets

Classification: 2.1

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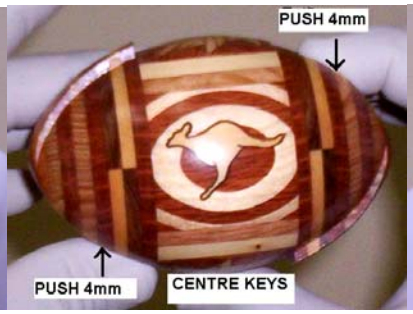
23 Football Downunder

Puzzle Solution:

#1 #2 #3



#4 #5

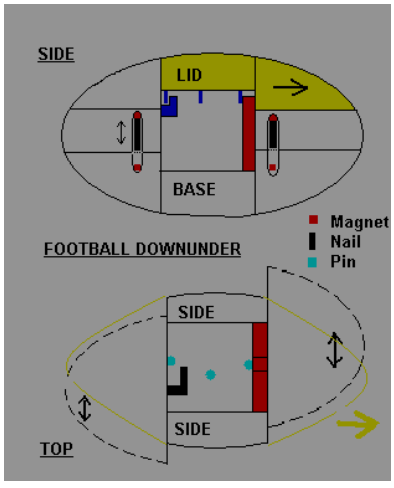
#6 #7 #8 #9 #10

10 Steps to open Puzzle Box

Shoelace section is the sliding lid

 # 1 Face the Shoelaces lid downwards
 # 2 Hold ball with Right hand

 # 3 TAP ball to Left Palm firmly
Centre Keys will now slide 4 mm
 # 4 Push Right key towards you,
 # 5 Push Left key away from you
If not,,,, tap again!
 # 6 Face Shoelaces lid upwards
 # 7 Press with both thumbs forward
and lid will slide 10mm and stop
 # 8 Slide the Right Centre key to the right,
push & slide lid forward another 10mm
 # 9 Slide the Right Centre key to the left
#10 Slide lid completely off,,,,,,,,,, Bingo!



Now smell the Camphor Laurel interior

 # Reverse the last few steps to replace the lid
Tap again with the Lid facing up this time.
It resets the nails back to the bottom
magnets on the Centre keys, which now
only move 1 to 2 mm.

(and if all else fails, drop the bloody thing ,,,,,,,,,,it opens!)

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24

Forest Puzzle

Puzzle Goal: **Remove the ring and then put it back.**

Materials: Natural wood and synthetic string

Classification: Disentanglement [4.3 String puzzle]

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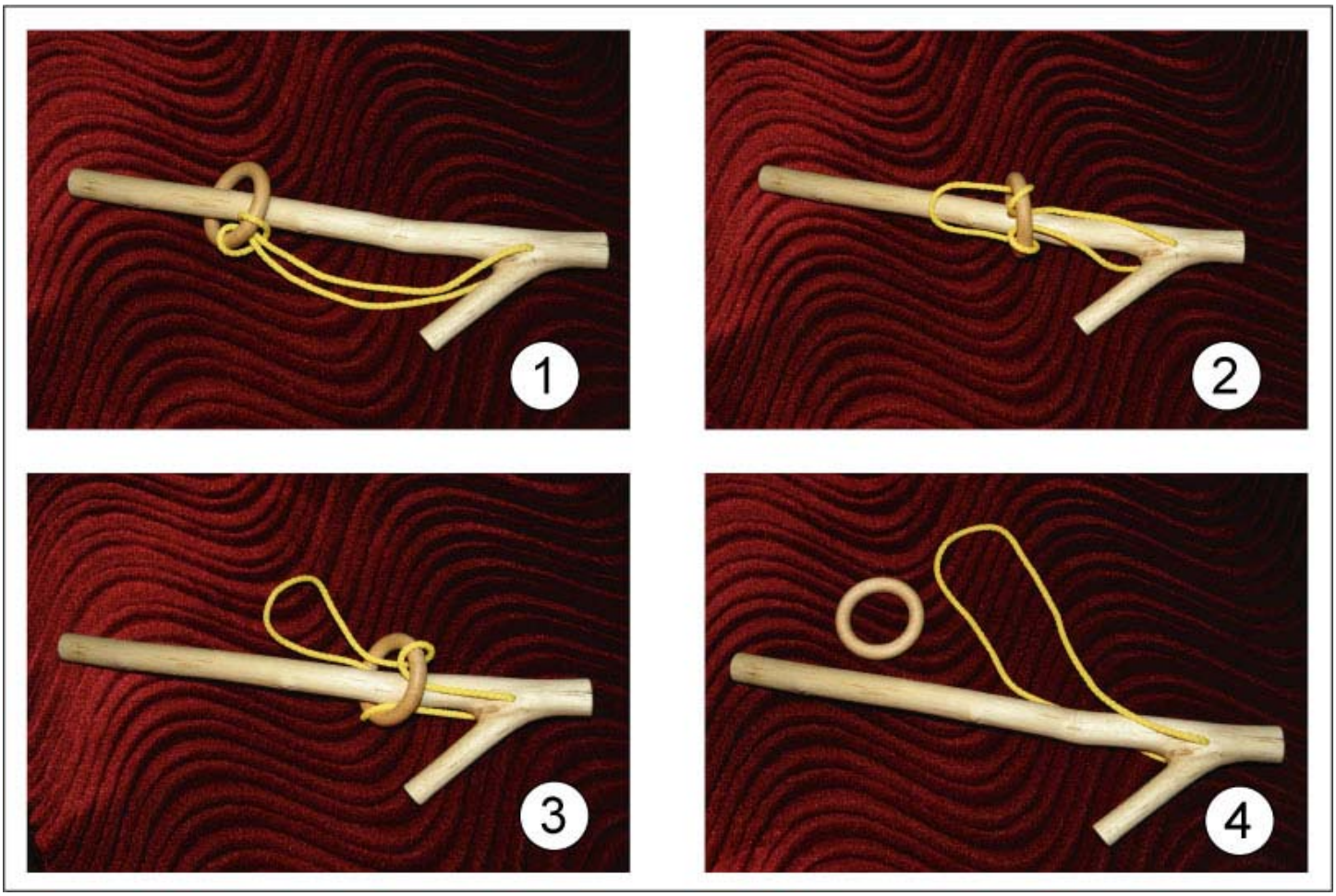
24 Forest Puzzle

Puzzle Solution:



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25

FourFit

Puzzle Goal: **Fit the four Pentominoes into rectangular tray.**

Materials: wood

Classification: Put-together

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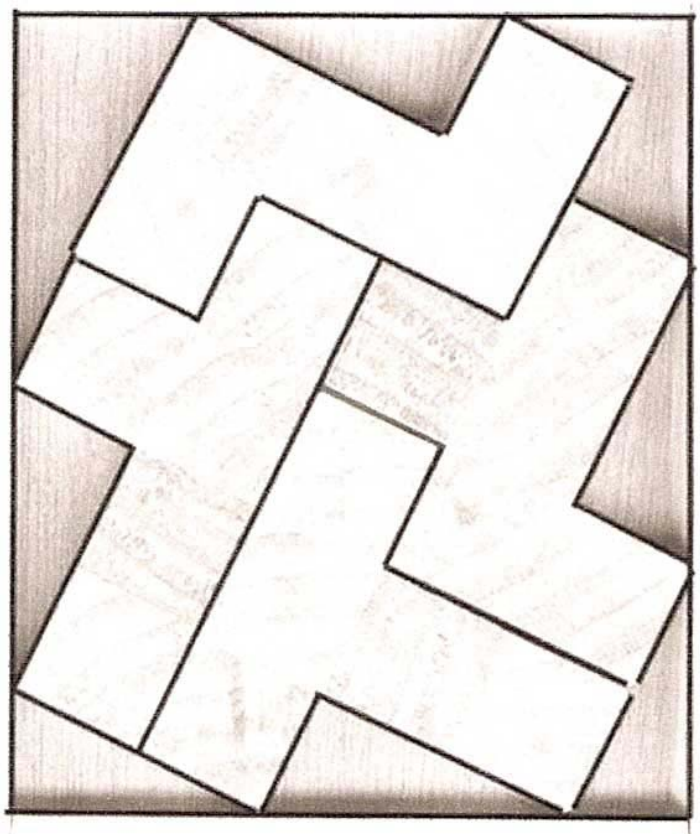
25

FourFit

Puzzle Solution:



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26

Inside Out

Puzzle Goal: **The puzzle contains six pieces. The goal is to connect the six pieces to make either a dodecahedron or a cube. Each edge contains two magnets, which must match in polarity with the adjacent edge.**

Materials: Ebony, satinwood, and magnets

Classification: Put-together

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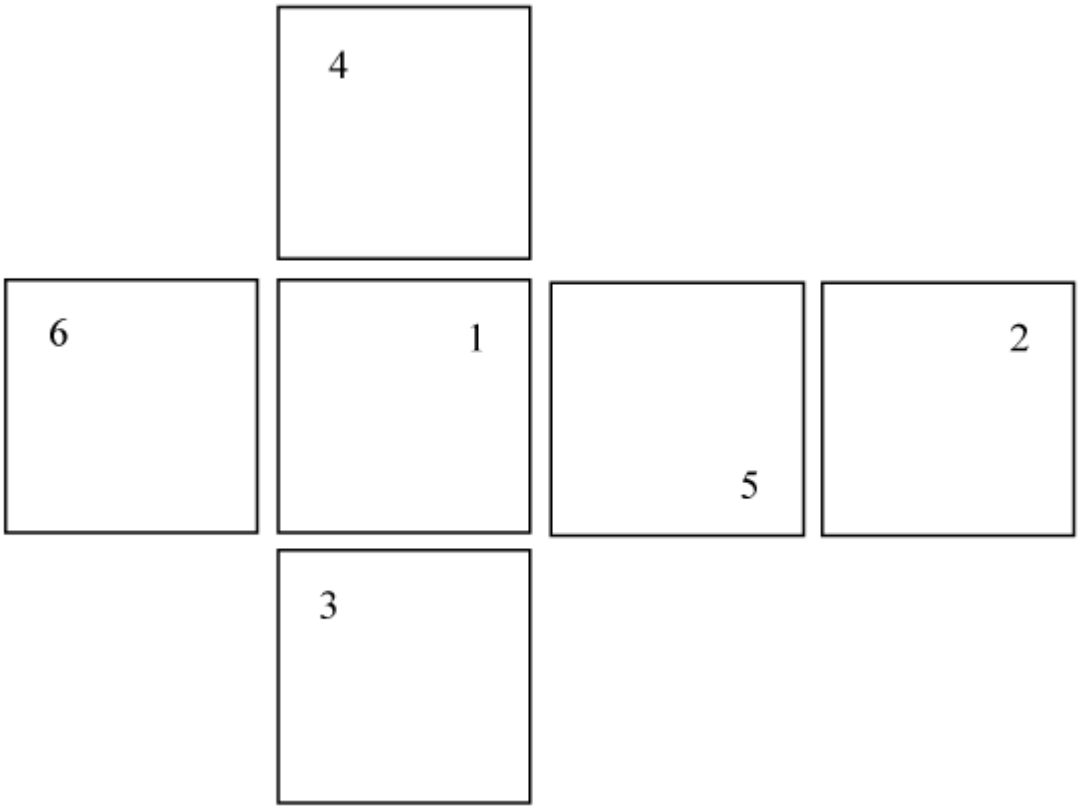
26 Inside Out

Puzzle Solution:

For the purposes of the IDC, each piece has been given a number in one corner of the flat side. When laid out as shown below, roof side upwards, this provides a guide as to how to assemble either the cube or the dodecahedron.



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27 Jeweled Crown Puzzle

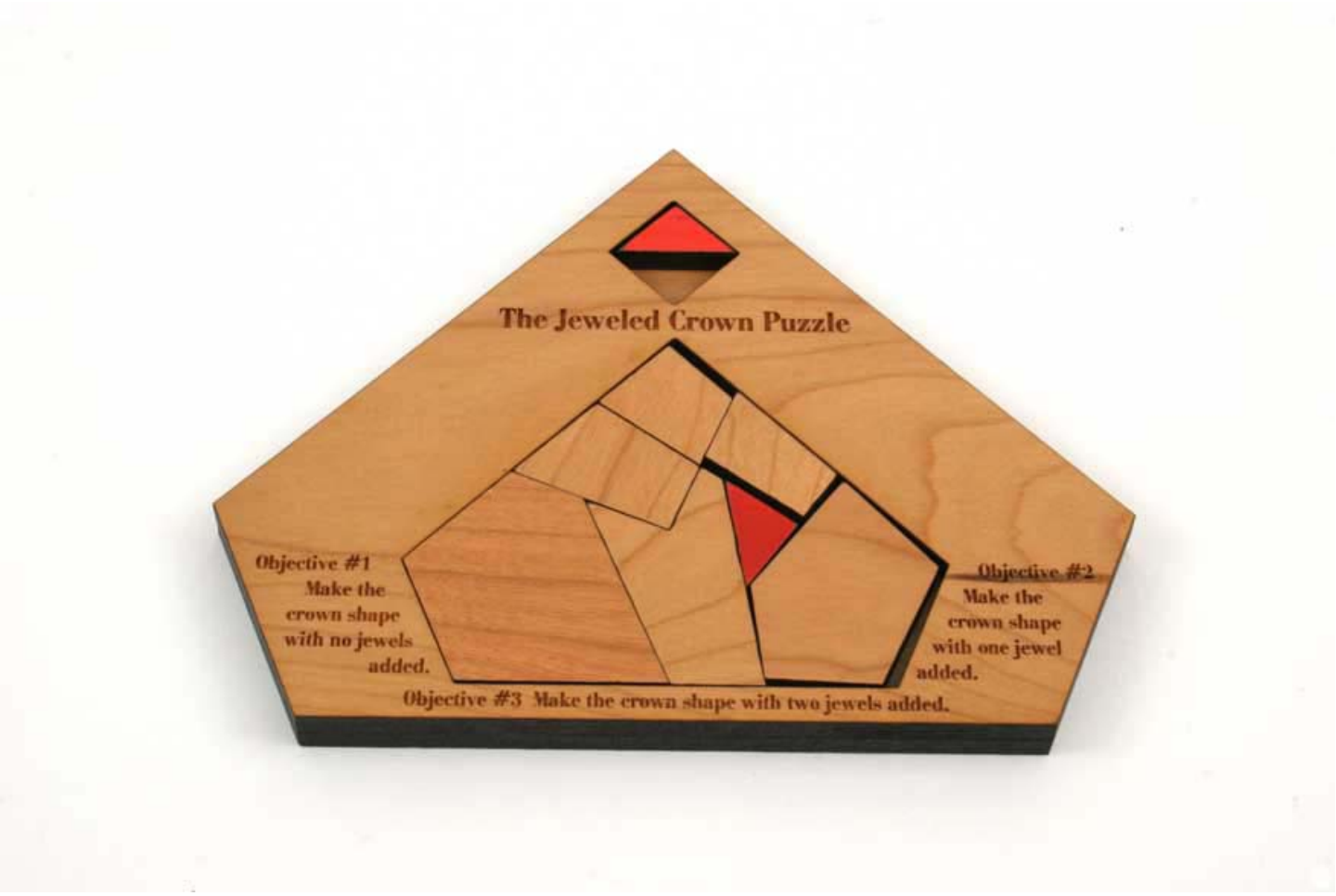
Puzzle Goal:

1. **Spill out the pieces and make a crown shape with the six pieces. Pieces may be turned over.**
2. **Rearrange the pieces with an added jewel to make a slightly larger crown shape.**
3. **Rearrange the pieces with a second added jewel to make an even larger crown shape.**

Materials: Wood

Classification: Put Together

Notes: This is the minimum number of pieces known which allows three shapes at different scales to be built.



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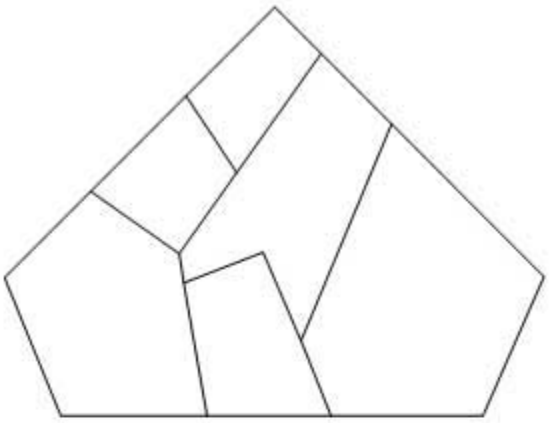
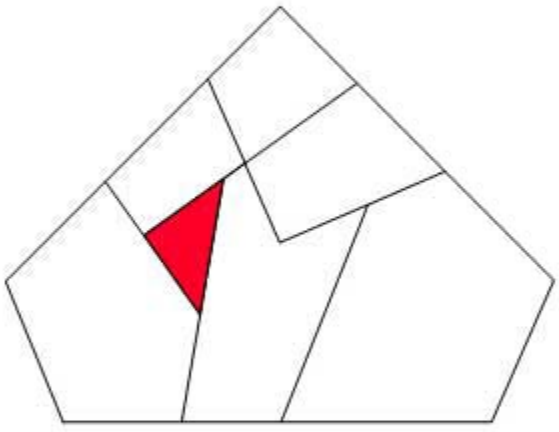
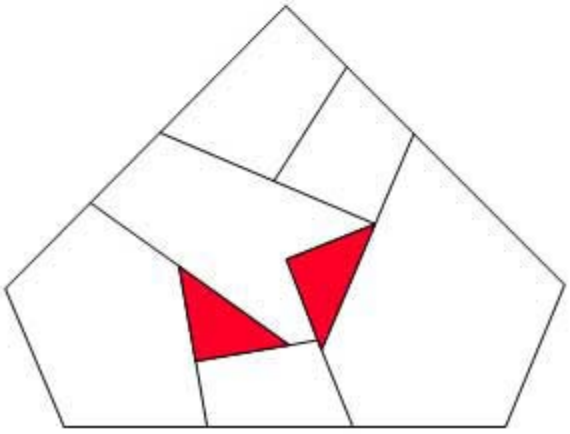
27 Jeweled Crown Puzzle

Puzzle Solution:







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28

La Ronde des Animaux

Puzzle Goal: **The goal is to solve the enigma of the poem (or back), then arrange the animals as hinted by the poem to form a new figure; then afterwards assemble them in the frame.**

Materials: Wood, paper and glass

Classification: Enigma arrangement, and put-together

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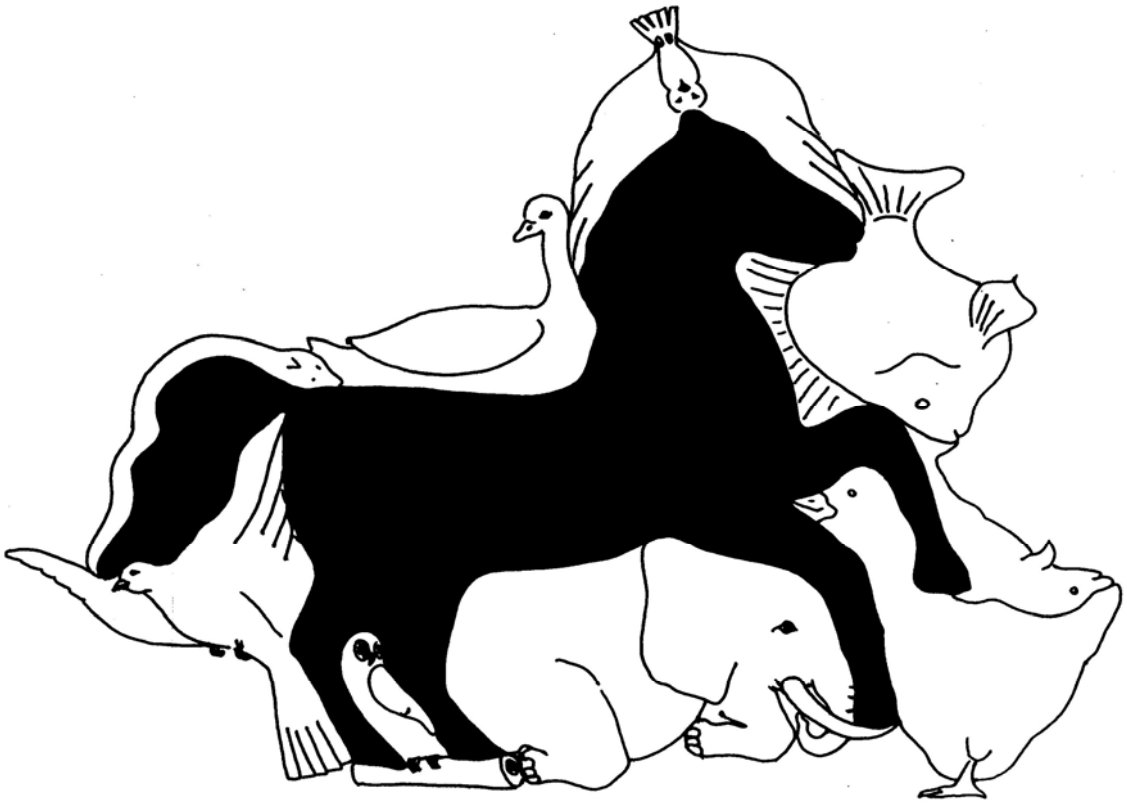
28 La Ronde des Animaux

Puzzle Solution:

Each word bears special importance and makes it possible to position correctly each piece. The title makes it possible to grasp the overall position (round for circle, and pieces being in contact just like a child's round dance). The logical sequel of the poem corresponds to the logical sequence of the animals in the circle, and their position (right side out or upside down) is implied in the text. For example, on the left the elephant is lying down; on the right the dolphin has its tail right up in the air.

If the riddle is correctly interpreted, the final positioning of the pieces will prompt the reply that it is a horse, as one can see in the following picture:



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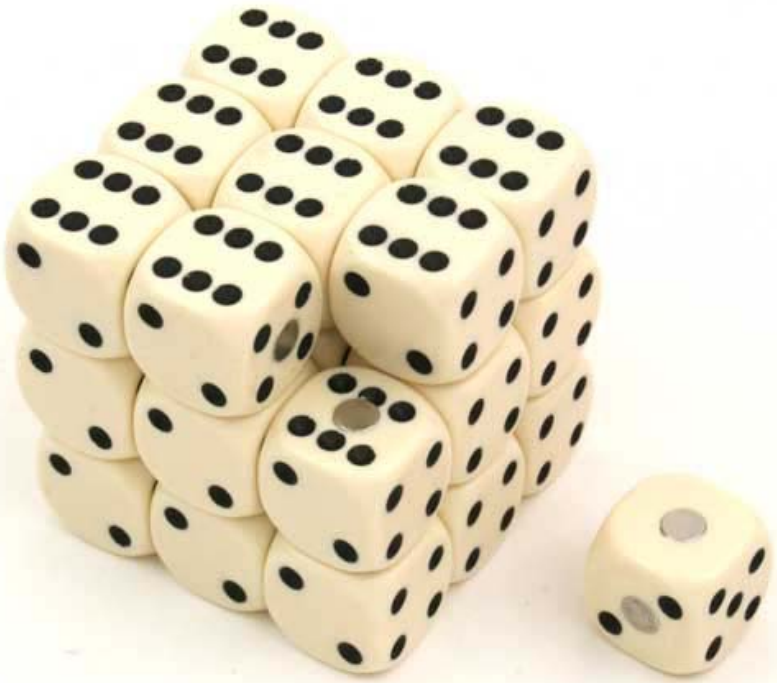
29 Magnetic Super Dice

Puzzle Goal: **Connect the dices to each other to form a solid 3x3x3 cube. The whole cube becomes one consisted form and keeps its shape by magnetic force.**

Each face of the cube displays the same side of each separate dice. Each magnet must connect to another magnet.

Materials: Plastic dices and cylindrical magnets

Classification: Pattern puzzle PAT (Dalgety)



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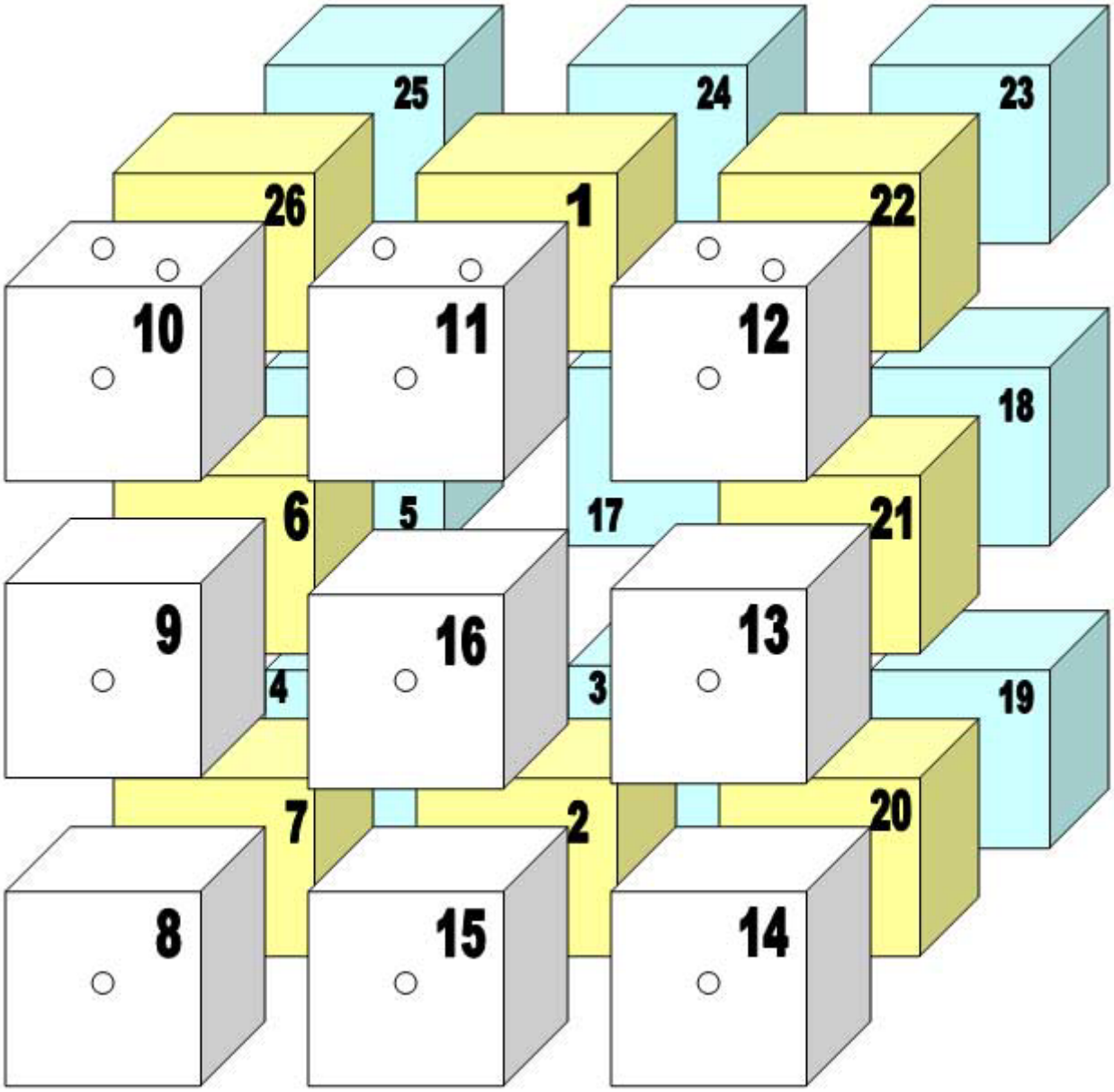
29 Magnetic Super Dice

Puzzle Solution:

Center die (not displayed) has four magnets. Sequence is 1, center, 2-16, center, 17-26, 1. Note the orientation of the faces with one and two pips.



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30

Micromaze

Puzzle Goal: **Cover the two dark pins with the smaller cubes by rolling them into place. Each face of the large cube is a separate puzzle.**

Begin by placing the small cubes on top of the large cube so that their symbols are visible and match the orientation on the larger cube. Start with the blue arrow cube as the active cube—only the active cube can be rolled. Roll the active cube up, down, left or right and do not fall off the top of the large cube. Only roll onto a pin if there is a hole in the smaller cube which allows it to roll onto the pin. If you roll adjacent to the other cube, you can move your fingers onto the other cube, making it the active cube. Diagonal positions are not adjacent.

Materials: Maple with polyurethane, screws and screw caps.

Classification: Sequential Movement

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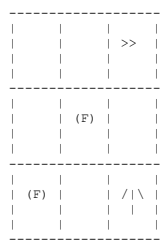
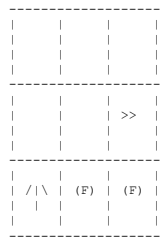
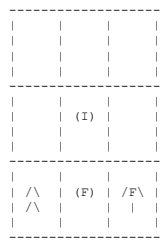
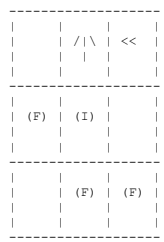
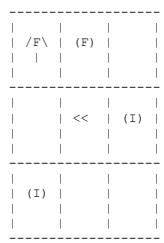
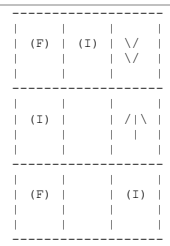
30 Micromaze

Puzzle Solution:

Orient the drawing to match the face of the cube, then begin with the blue arrow and roll the cubes.

	Up, Up (transfer), Left, Left, Down, Down, Right, Right, Up (transfer), Up, Left, Down, Down, Right (transfer), Up, Up, Left, Left, Down, Down, Right (transfer), Up
	Up, Up, Right, Down, Left, Down, Right, Up, Left, Up, Right, Down, Down, Right, Up (transfer), Up, Left, Down, Down
	Up, Up, Left, Down, Left, Up, Right, Down, Left, Up, Right, Right, Down, Left, Down, Left (transfer), Up, Up, Right, Down, Left, Up, Right, Right, Down, Left, Up, Right, Down, Down
	Right (transfer), Down, Left, Up (transfer), Right, Down, Left (transfer), Up, Left, Down, Right, Right (transfer), Up, Left, Down (transfer), Left, Up, Right (transfer), Right, Down, Left, Up, Left (transfer), Down, Down, Right, Up, Up (transfer), Left, Down, Right (transfer), Right, Down
	Down, Right (transfer), Down, Left, Up (transfer), Right, Right, Down, Left, Left (transfer), Up, Right, Down (transfer), Right, Up, Left (transfer), Down, Left, Up, Right, Right (transfer), Down, Left, Left, Up, Right (transfer), Down, Right, Up, Up, Left, Down, Left (transfer), Down, Right, Up (transfer), Left, Up, Right, Down, Down (transfer), Left, Up, Right (transfer), Up, Left, Down (transfer), Down, Right, Right, Up, Left, Up
	Left, Up, Right (transfer), Down, Left, Up (transfer), Right , Down, Left (transfer), Down, Right, Up (transfer), Up, Left, Down, Right, Down (transfer), Left, Up, Up, Right, Down (transfer), Left, Up, Right (transfer), Down, Left, Up (transfer), Right, Down, Left (transfer), Up, Right, Down (transfer), Left, Up, Right (transfer), Down, Left, Up (transfer), Right, Down, Left (transfer), Down, Right, Up (transfer), Left, Down, Right (transfer), Up, Left, Down (transfer), Right, Up, Left (transfer), Down, Right, Up (transfer), Left, Down, Right (transfer), Up, Up, Left, Down, Down (transfer), Right, Up, Up, Left, Down (transfer), Left , Up, Right (transfer), Down, Down, Left

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31

Miruha Burr

Puzzle Goal: **Remove the three burrs from the cubic structure, then reassemble the cube.**

Materials: Wood (hemlock and poplar, oil coated)

Classification: Interlocking, framed burr

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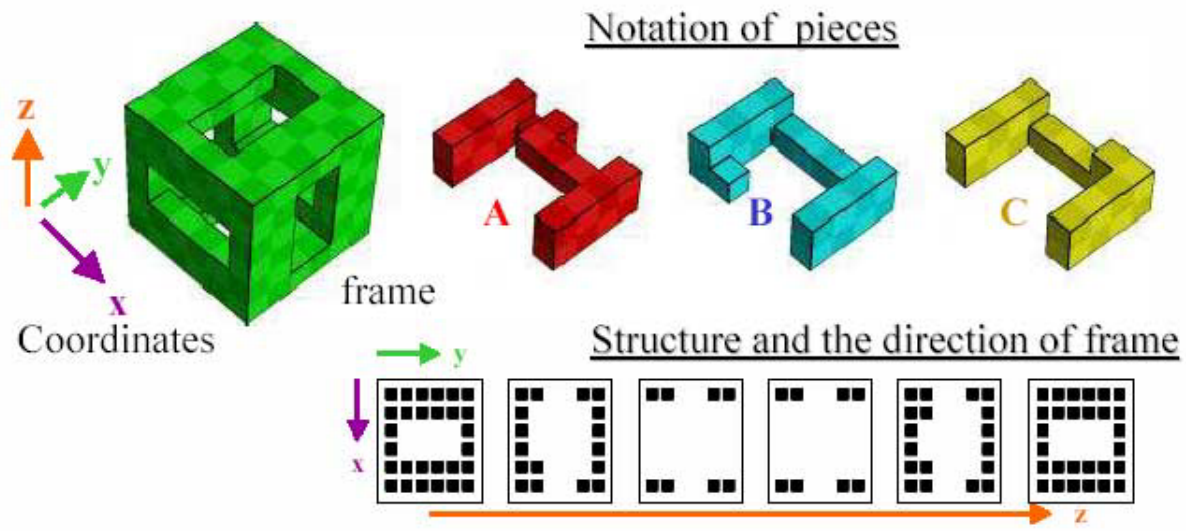
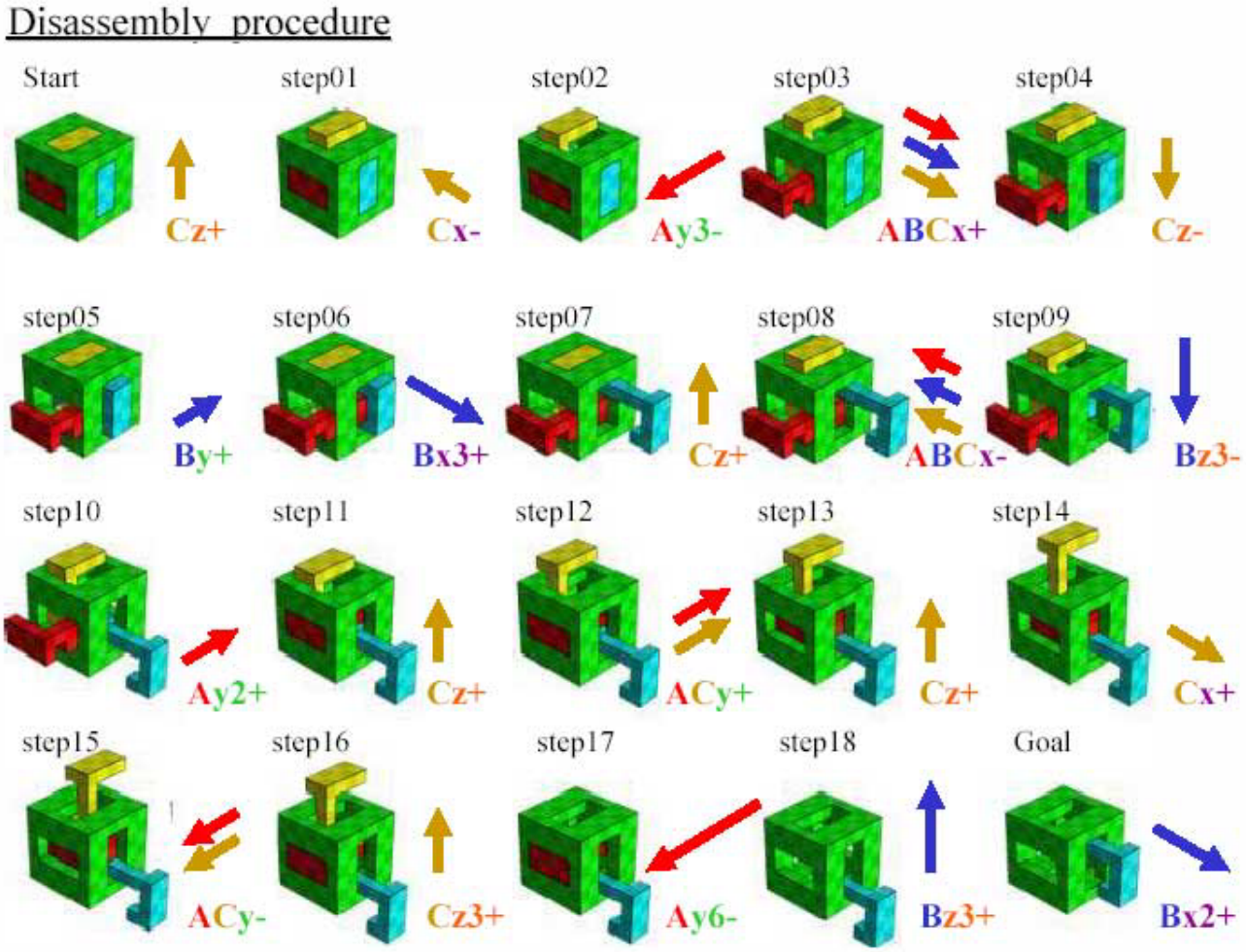
Miruha Burr

Puzzle Solution:





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32 Passe-Cylindre

Puzzle Goal: **Put the brass cylinder in the bottom hole of the wood cylinder (closed by the other piece of wood), so you must get it out by the other hole.**

Materials: Wood (beech or ash), PCV and brass

Classification: Sequential move (Internal maze)

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32 Passe-Cylindre

Puzzle Solution:

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33

Pull the Kunai!

Puzzle Goal: **Pull the Kunai (sword).**

Materials: solid wood, poplar

Classification: Take Apart

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33 Pull the Kunai!

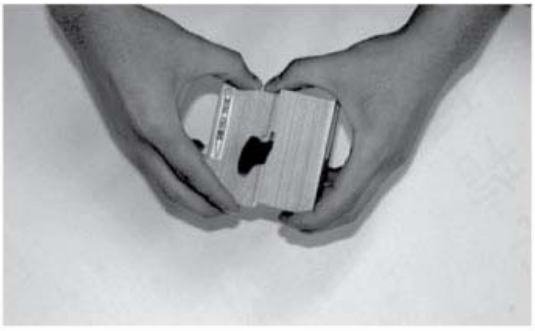
Puzzle Solution:

①

Kunai is a Ninja sword.

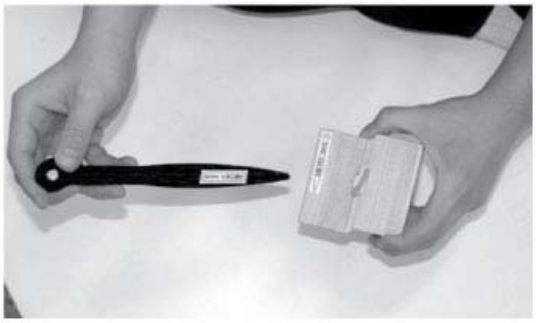
Pick the Kunai and the block up and turn them ona flat table.

②



Quickly slide the block after turning with keeping the blocks straight.

③



Pull the Kunai from the opening in the blocks.

④

Finished

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34

Quartet 8L2

Puzzle Goal: **Separate four identical pieces by explosion, then interlock two colored rings without using force.**

Materials: Wood (keyaki jindai, mobingi, pao rosa)

Classification: Put Together, Take Apart

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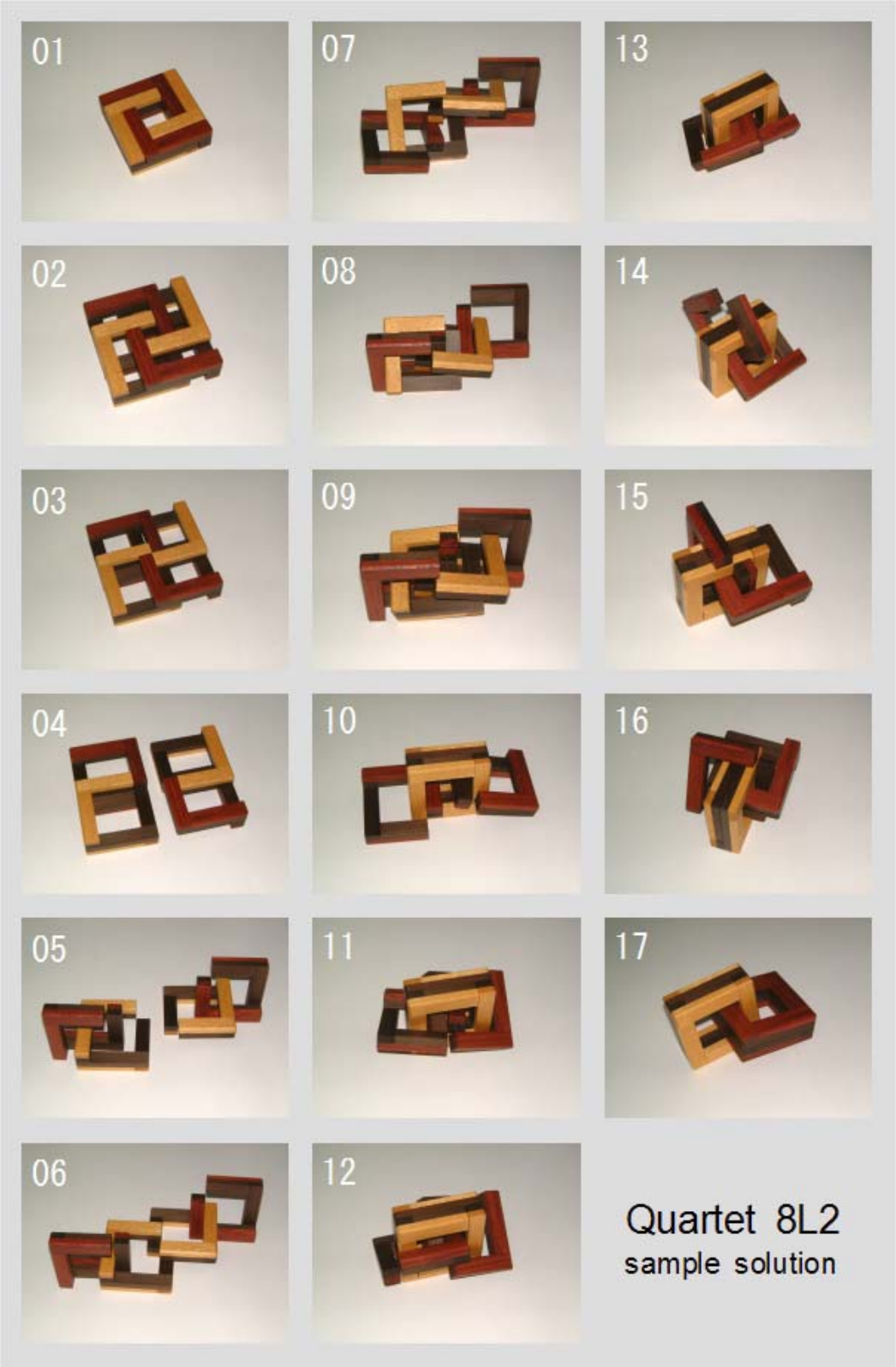
34 Quartet 8L2

Puzzle Solution:



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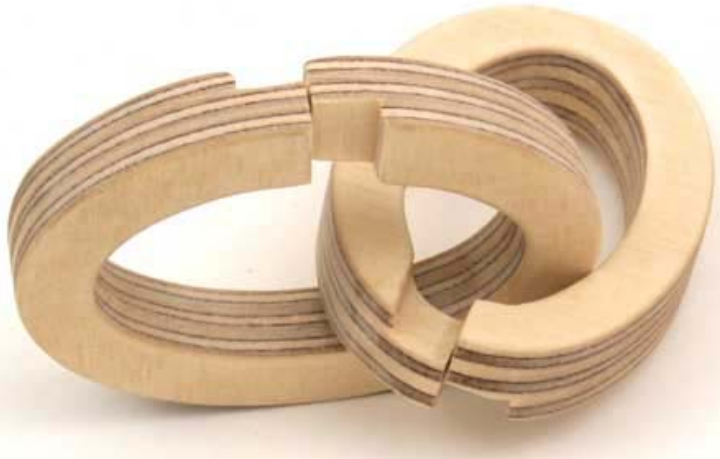
35

Rappi-Fusion

Puzzle Goal: **Put together, and then take apart the rings.**

Materials: Plywood

Classification: ASS-MAT, 3D



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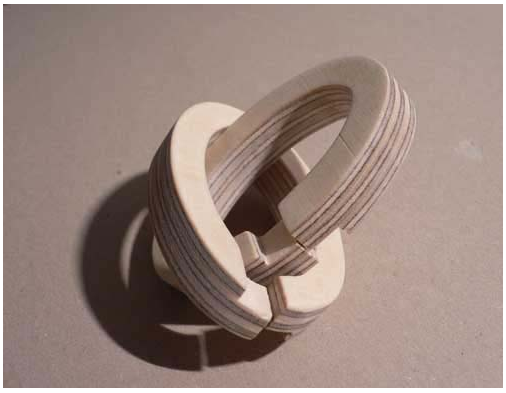
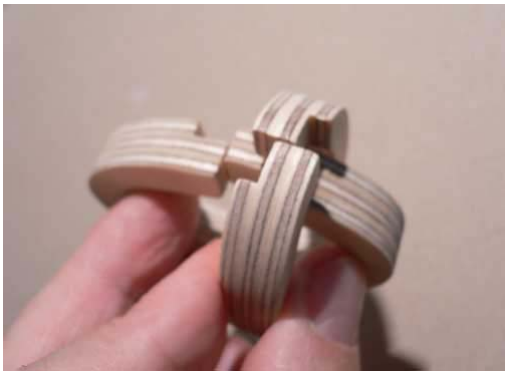
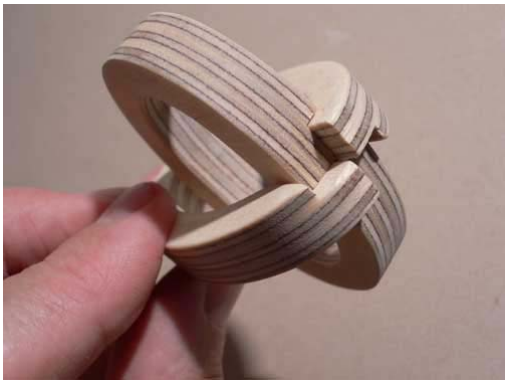
35 Rappi-Fusion

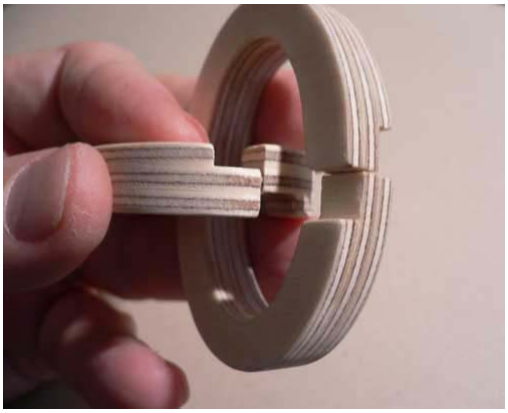
Puzzle Solution:

Place the oval ring, with the opening in the smaller diameter, into the oval ring, with the opening in the grater diameter. And then you have to deform the openings a small amount with 4 hands and then you put them together.









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36 Really Bent Board Burr

Puzzle Goal: **Disassemble the burr puzzle.**

Find one of the two possible ways to reassemble the puzzle.

Materials: Kingwood, holly, East Indian rosewood, tulipwood splines, poplar dowels

Classification: 3.6 - Miscellaneous interlocking solid puzzle

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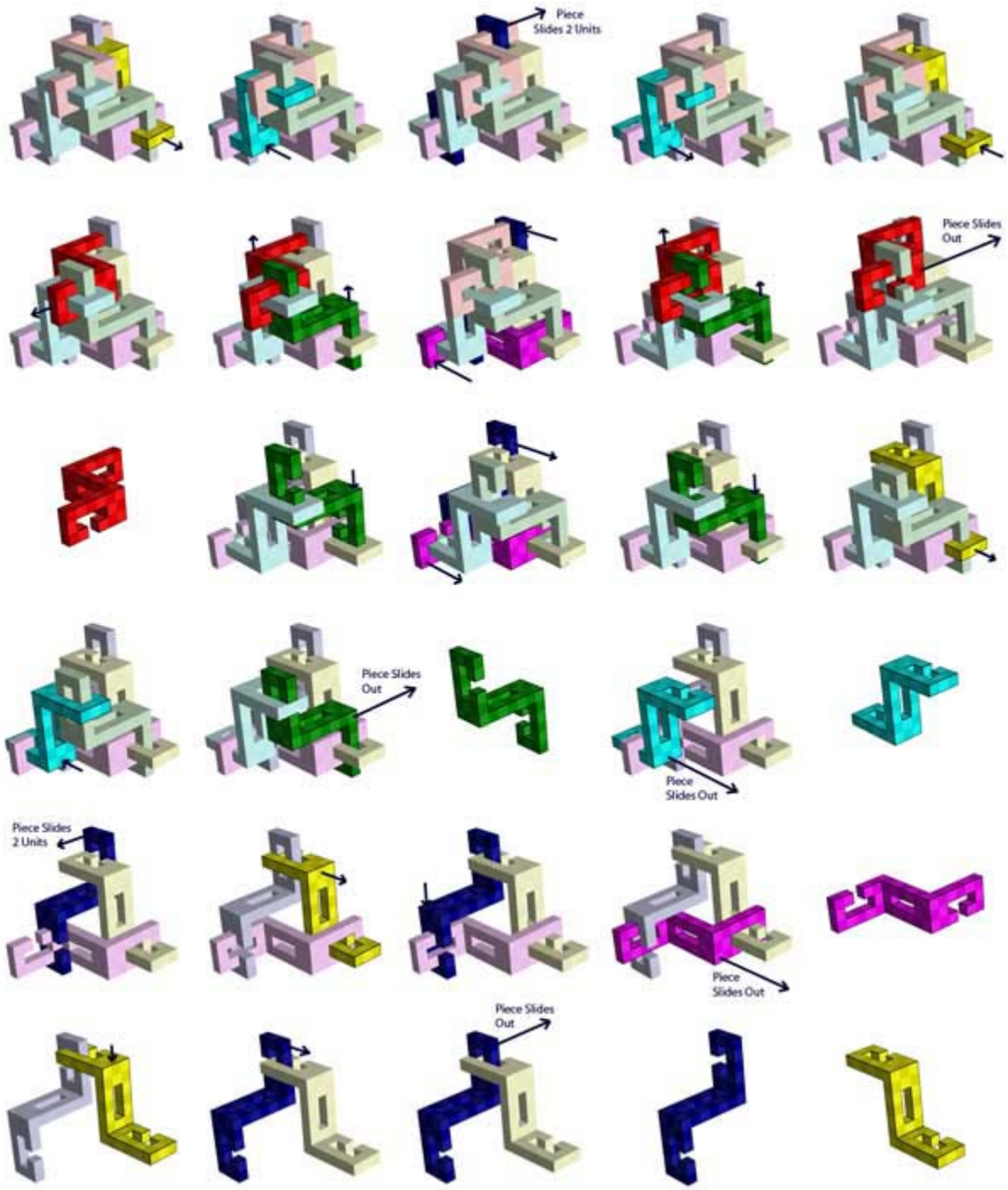
36 Really Bent Board Burr

Puzzle Solution:

Level 10 solution is below. The level-20 solution required to assemble the mirror image configuration is left as an exercise for the reader!



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37

Sailor's Knot

Puzzle Goal: **Untie the knot, then re-tie the knot on the inner part, or vice versa.**

Materials: Birch wood and polyester rope

Classification: Disentanglement

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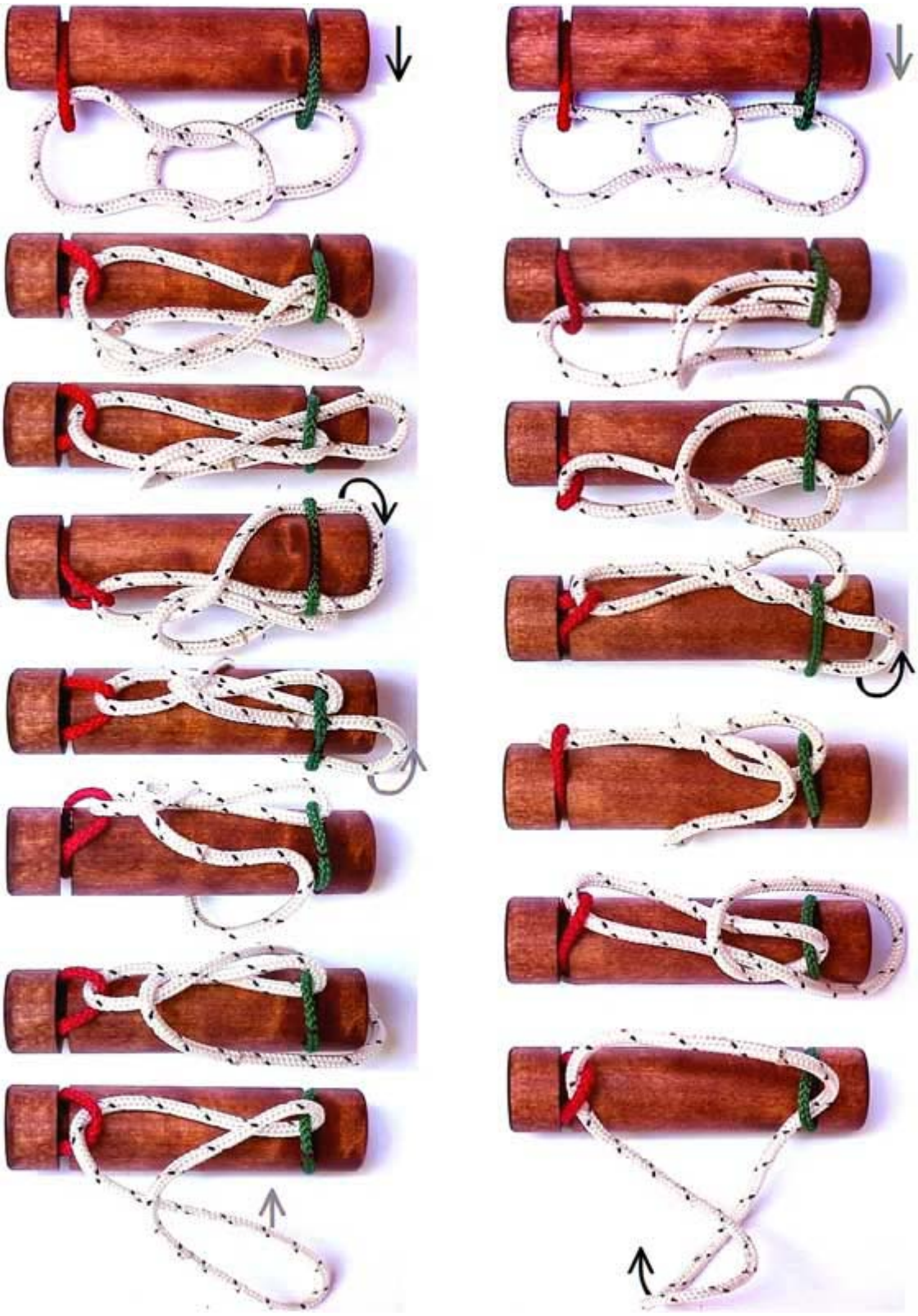
37 Sailor's Knot

Puzzle Solution:



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Save the Ninjas!

Puzzle Goal: **Remove the ring and Ninja pieces.**

Materials: spring, yew, teak, poplar

Classification: Disentanglement

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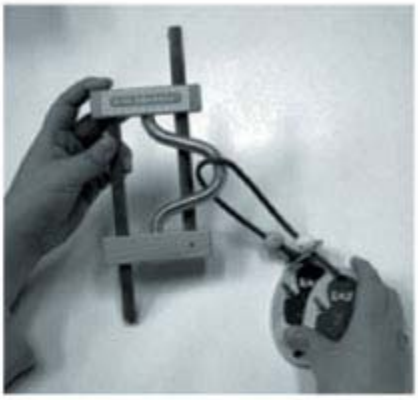
38 Save the Ninjas!

Puzzle Solution:

①



The sticks move up and down when bending the spring.

②

Pass the bent spring through the ring.

③

Pass the Ninja piece through the spring.

④

Finished

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39

Scroll of Iga Ninjas' Arts

Puzzle Goal: **Remove the scroll from the rod, then pass the scroll again through the hole.**

Materials: Bottle, yew and teak

Classification: Dexterity

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39 Scroll of Iga Ninjas' Arts

Puzzle Solution:

① Put the bar in the bottle. Hold the scroll down into the bottle.

② Set the end of the scroll in the hole of the bar.

③ With the scroll in the hole, push the scroll into the bottle.

④ Lay the bottle down horizontally.

⑤ Move the bar slowly untill the scroll in the middle of the hole.

⑥ Finished

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40 Secret of Atlantis

Puzzle Goal: **This puzzle has two sides, and each side has a specified solution state. The goal is to go from one solution state to the other and back.**

One solution state (on the one side) shows a picture of two Corinthian columns, and the other solution state (on the other side) shows the picture of a volcano looking at the capital of the city of Atlantis.

Materials: Transparent square plastic tiles with diagonal grooves, connecting strings, and paper tiles inserted between the plastic tiles.

Classification: 5.6 Miscellaneous sequential movement puzzles

Notes: The puzzle is based on the mechanism with square tiles and strings that is used on the Rubik's Magic.

A critical difference is that this puzzle uses an odd number of tiles. It is because of the odd number of tiles that this puzzle can never become flat. And it is the same reason that there is no shape-parity, giving the puzzle approximately double the combinations of other even numbered-tile puzzles.

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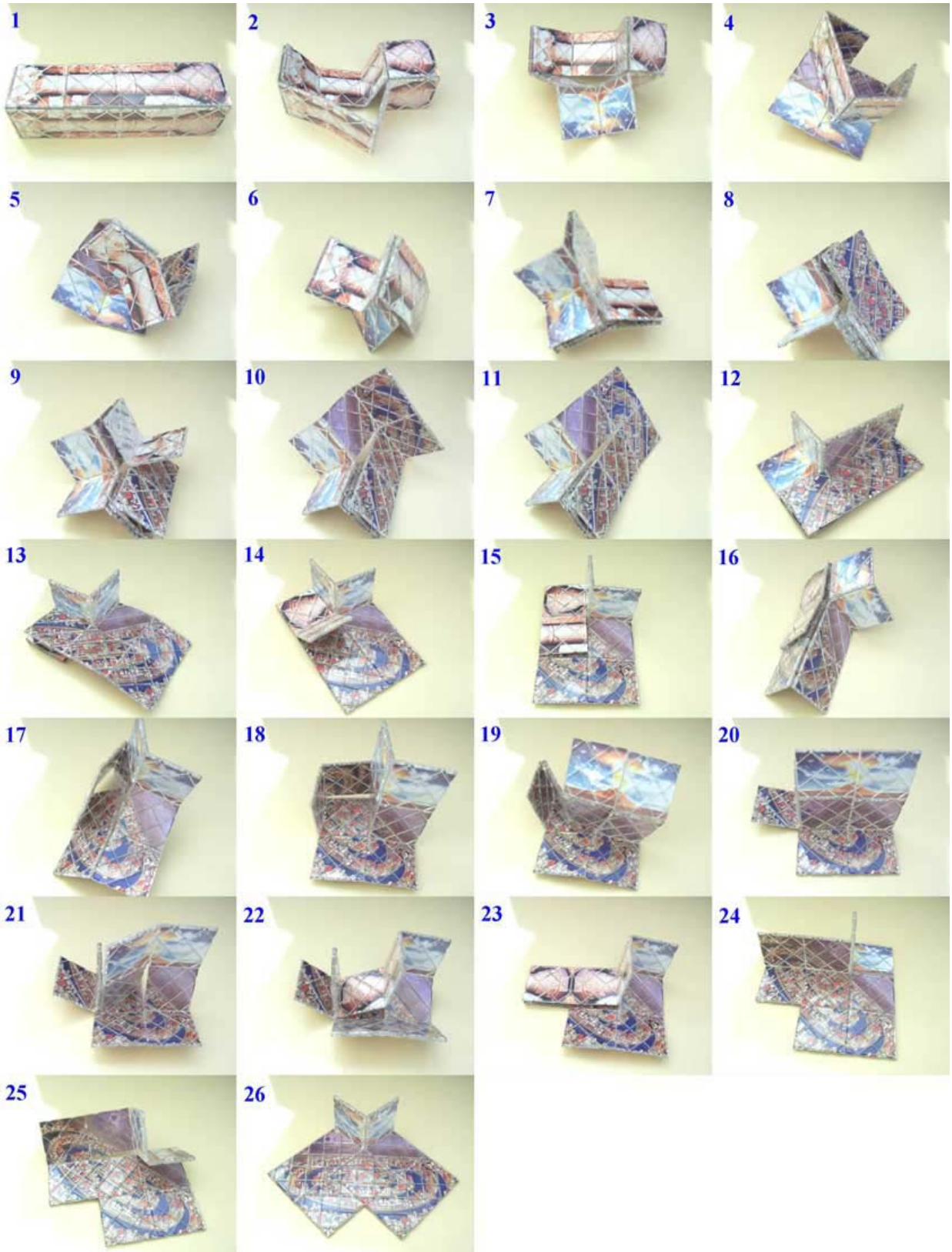
40 Secret of Atlantis

Puzzle Solution:



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41

Sewing Box

Puzzle Goal: **Find the hidden needle and string, and then use them to open the hidden drawer.**

Materials: Kenponashi

Classification: Take-Apart

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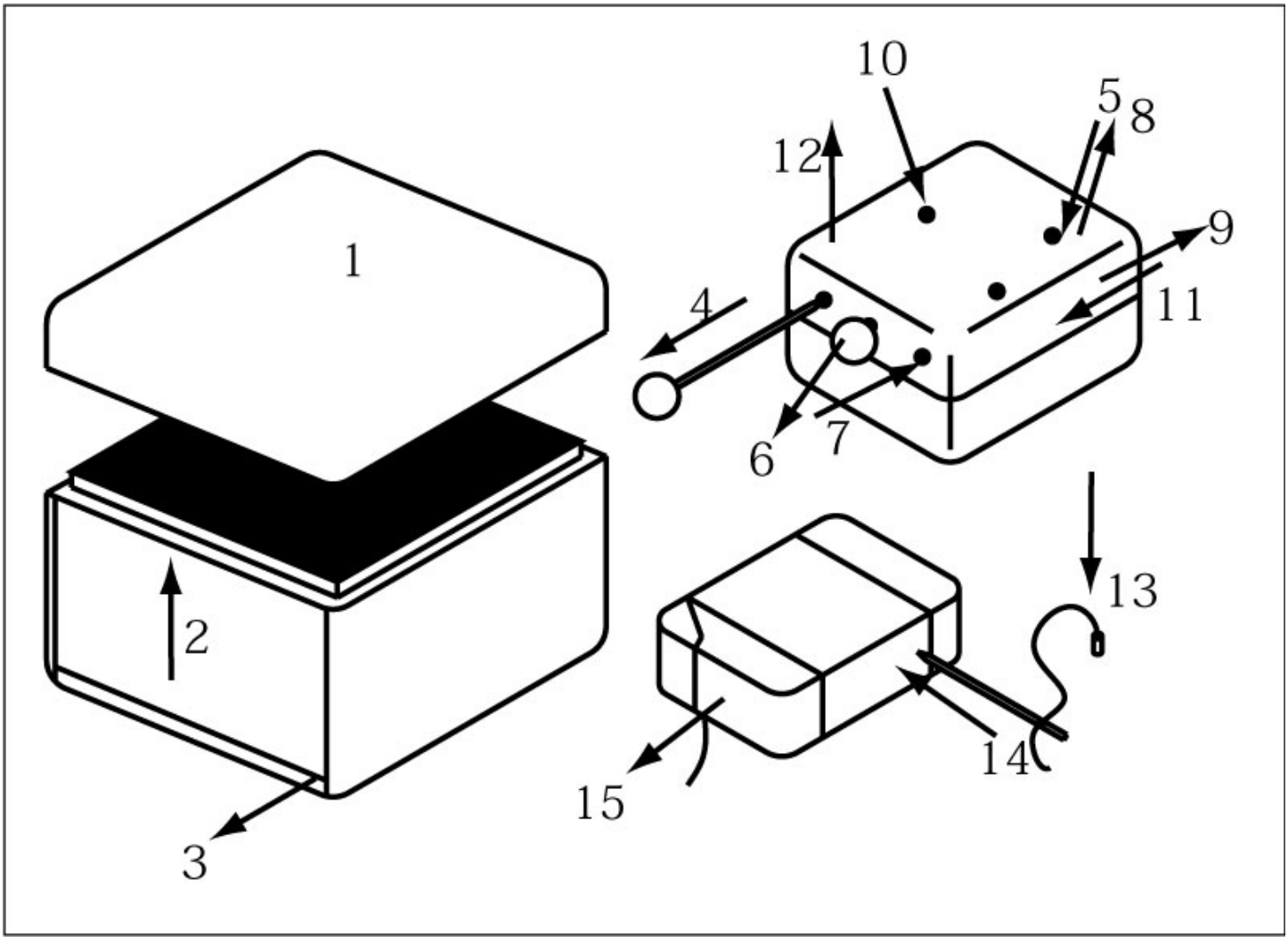
41 Sewing Box

Puzzle Solution:

Solution highlights:

- Step 3 – Remove the hidden needle.
- Step 12 – Find the thread inside the box.
- Step 14 – Pull the needle and thread through the hidden hole, taking care that the bobbin is oriented as shown. When completed, the tail end of the thread (with the wooden fixture) should be inside the hole, and the loose end of thread is sticking out the far (back) side, free of the needle.
- Step 15 – Remove the loose end of the wrapped thread from the end of the bobbin. Pull the thread (from step 14) against the spring tension, releasing the hidden drawer. As you pull the drawer further, slowly release tension on the thread, as it gets pulled inside the hole.



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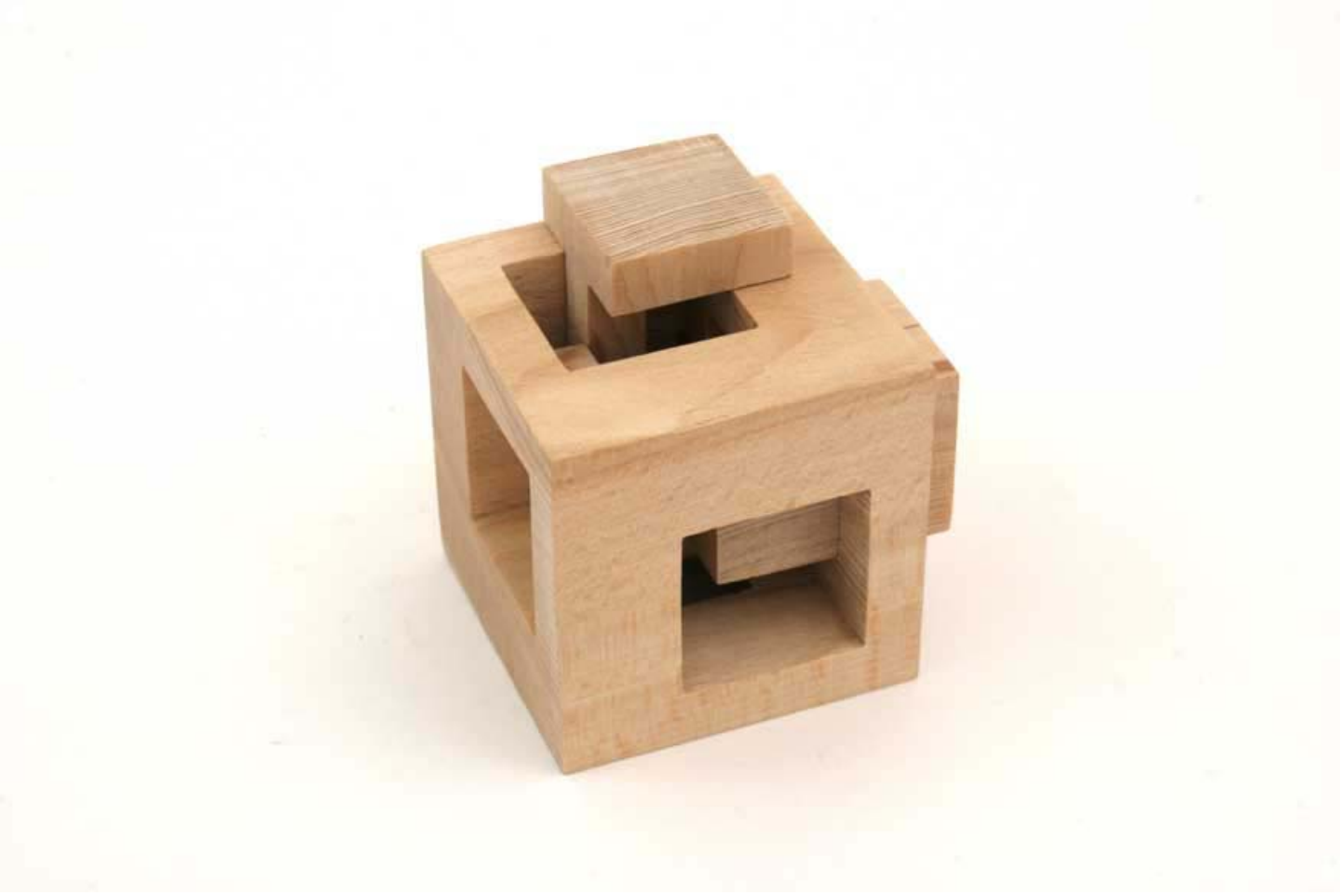
42

Shiroshi Burr

Puzzle Goal: **Remove the three burrs from the cubic structure, and then reassemble the cube.**

Materials: Wood (hemlock)

Classification: Interlocking, framed burr



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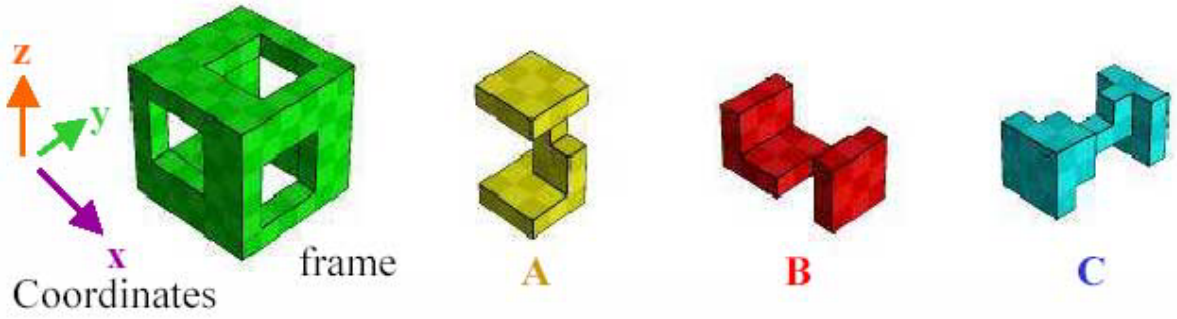
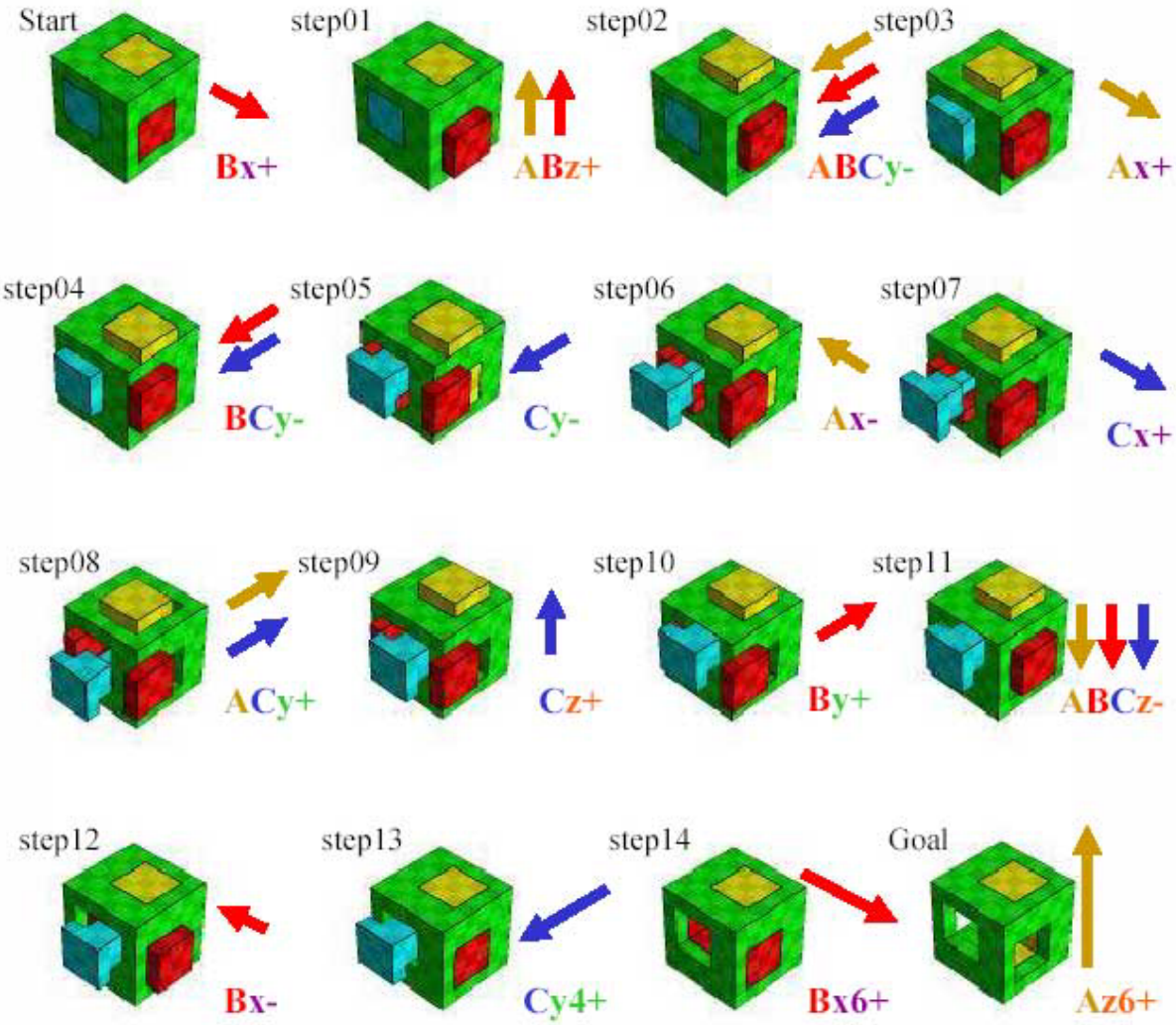
Shiroshi Burr

Puzzle Solution:

Notation of pieces



Disassembly procedure



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43 Sliding Metamorphosis

Puzzle Goal: **Slide the pieces to form the Square from the Cross.**

Materials: Maple, white ash, bubinga

Classification: Sliding block

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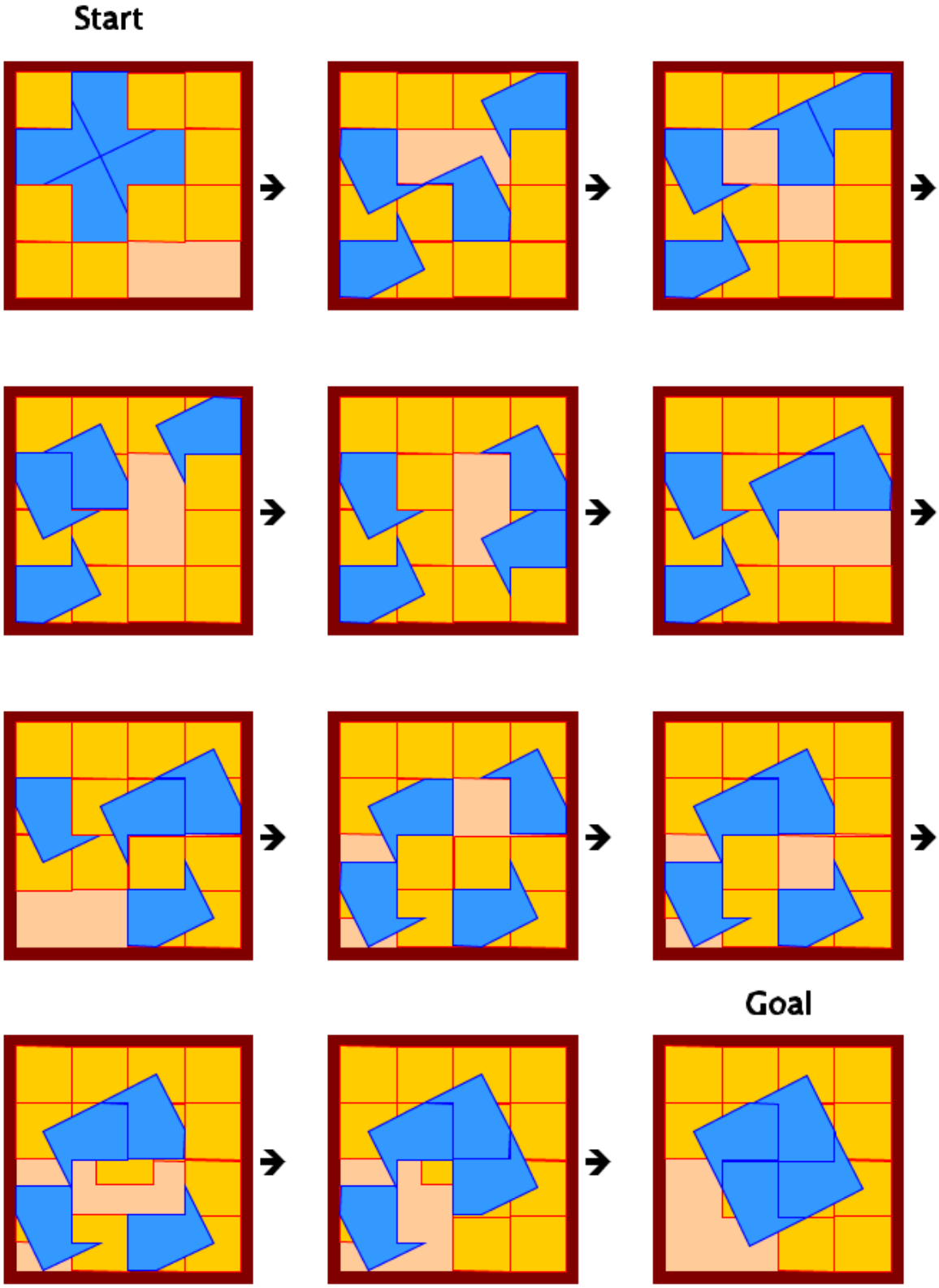
43 Sliding Metamorphosis

Puzzle Solution:



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44

Snake Escape

Puzzle Goal: **The snakes have escaped! Your job is to pack them all back safely inside the container so you may close the lid.**

Materials: Snakewood, prehistoric kauri wood, ebony, maple

Classification: Put together.

Notes: Snakewood is one of the hardest woods in the world. It has a very unique quality of showing a spotted snakeskin figure radiating in all directions. The prehistoric kauri wood is carbon dated somewhere between 30,000 and 50,000 years old. The ancient trees fell long ago and stayed preserved in bogs. Ancient kauri wood is excavated out of the ground in New Zealand.

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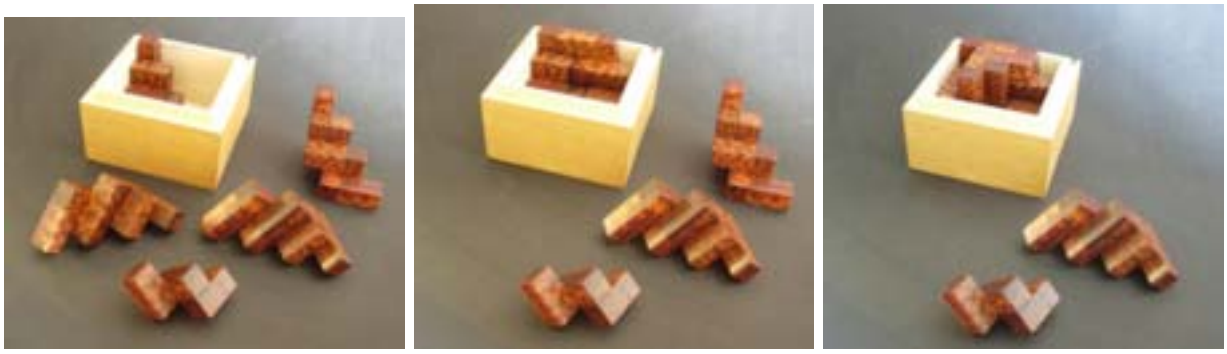
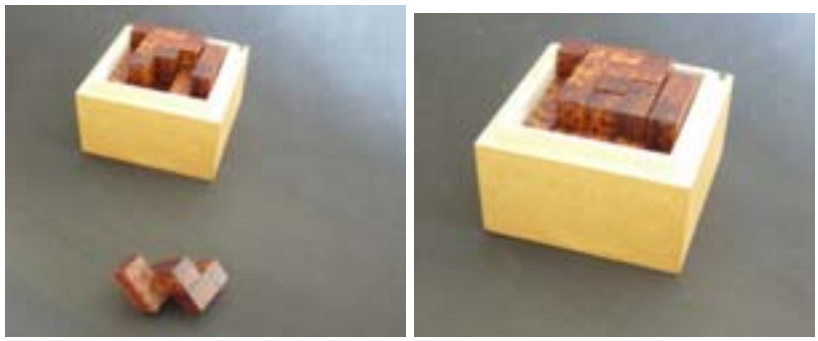
44 Snake Escape

Puzzle Solution:

The snakes will not cooperate individually. So you must first combine them in pairs. Position two snakes up neck to neck as in the photo. Then rotate the 2 snakes toward each other forming a new shape. These four new shapes can be stacked into the box along with the extra baby snake.





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45 Switched Maze

Puzzle Goal: **At the very beginning the stylus is situated at the START point (left). Hold the handle and try to draw it through the maze to the FINISH point (right) and take it out.**

When the mission is complete, return the stylus to the START—puzzle is ready for a new victim!

Materials: Plexiglas

Classification: Sequential movement puzzle (SEQ)

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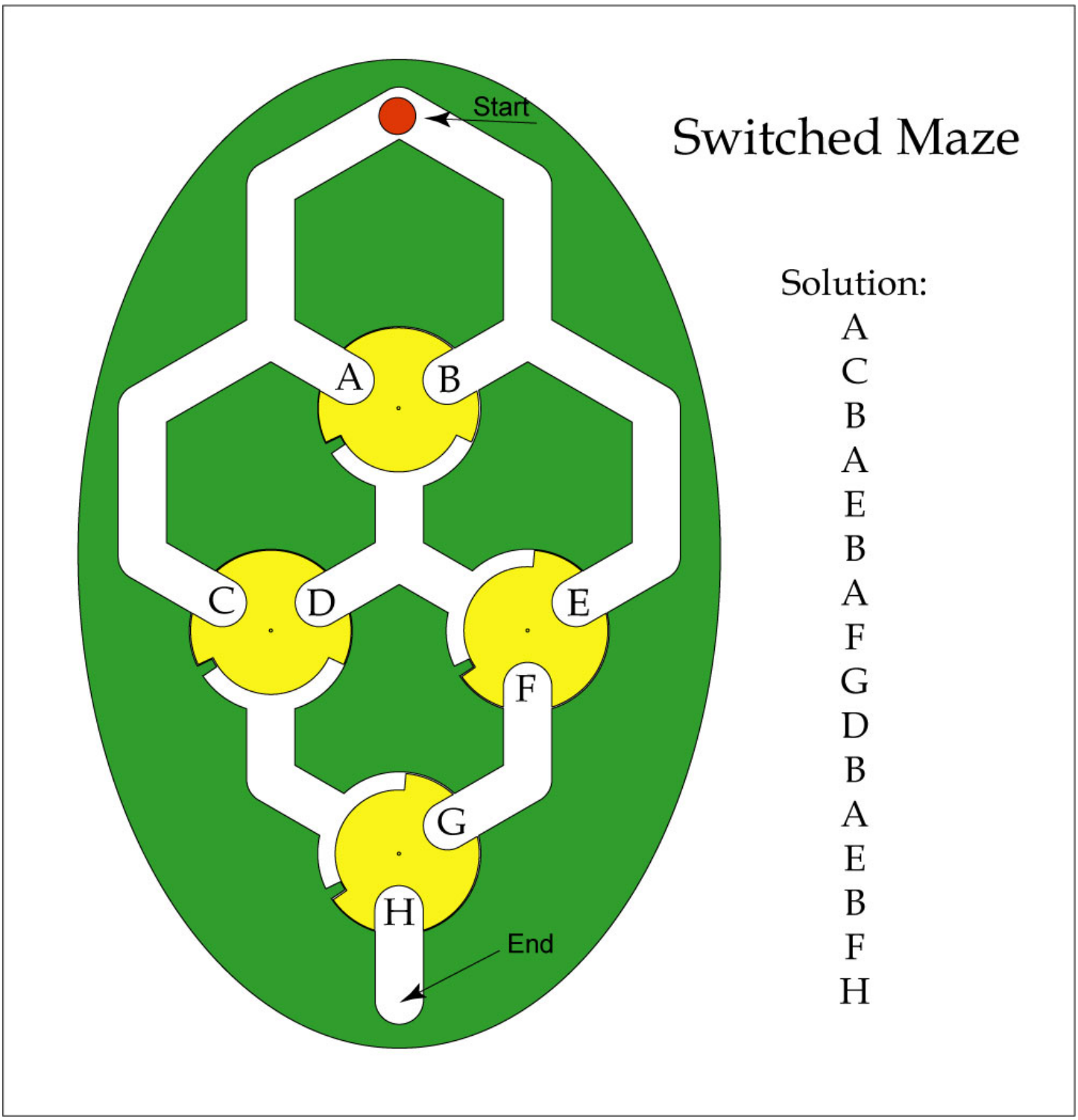
45

Switched Maze

Puzzle Solution:



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46 Tamashido

Puzzle Goal: **Build the various hollow pyramids with the steel balls, as described in the instructions. The tools, extra balls, and holes can all be used as construction aides.**

Materials: Hardened steel, PVC, ferrite

Classification: DEX-TOOL / INT-POLY

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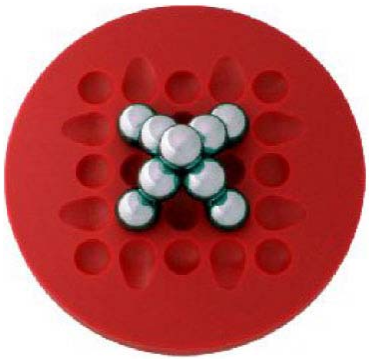
46 Tamashido

Puzzle Solution:

The Four Winds



The Four Winds is build on the squared side of the base with the four corner balls of the first layer in a round hole, so there are five places where it can be build. Because the center ball of the first layer is impossible to remove if put, t he first layer has to be constructed like the left picture. Then, two balls have to be put at the same time, like the right picture. After then, the three last balls can be put one by one, and finally four balls of the first layer can be removed with the tool.

The Five Chambers

The Five Chambers is made of five *Four Winds* minus one ball you can remove for fun without risk for the construction. Therefore, you should start with a first layer shaped like the picture 1. Then the second layer is easy to fill in while two balls are put simultaneously, as the method for *The Four Winds* (Pic.2) then two of the four central balls have to be removed (Pic.3).

The third and fourth layers can now be completed (Pics.4-7). The four third layer and three inside balls have to be removed before the eight balls of the first layer (Pic.8-9). The only thing you have to care during the whole process is to never touch any other ball than the one you intend to pull with the tool.

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47

Telephone Box

Puzzle Goal: **The puzzle is to open the telephone box to allow you to have fun with the packing puzzle inside.**

To open the telephone box you will need to solve a series of puzzles to find the required tools and work out how to use them to open the door. The pieces packed inside the telephone box spell the words TELEPHONE BOX.

Materials: The telephone box is made from satin sycamore timber and finished with brass hardware.

The letters of the telephone box are made from other exotic Australian timbers: T-blush alder, E-grey gum, L-Queensland blackbean, E-grey gum, P-red oak, H-brown quondong, O-saffron heart, N-flooded gum, E-grey gum, b-red oak, o-black wattle, x-blackbutt.

Classification: Telephone box – 2.1 Packing puzzle inside – 1.2

Notes: The box is a replica of a full size 1940's Queensland PMG telephone box.

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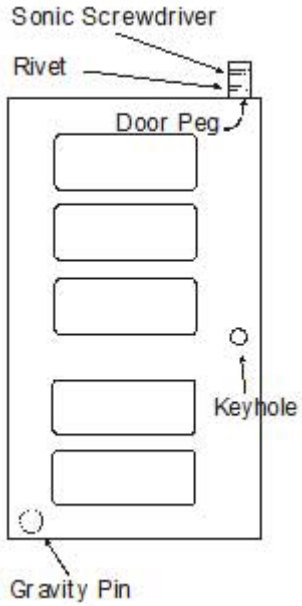
47 Telephone Box

Puzzle Solution:



To open the telephone box:

- Start with the telephone box lying on its side, with the door facing up and the roof farthest away from you.
- Rotate the box anti-clockwise 180°
- Slide the door towards you; you should see a gravity pin, right hand side, bottom of door as the puzzle is orientated now.
- Rotate the telephone box another 90° anti-clockwise and the first tool, a rivet will fall out near the door peg
- Rotate another 180° anti-clockwise (the door is now on the left side)
- Push the door closed about 1-2mm and stop. You will hear a pin fall inside the roof above the door peg.
- Now push in the gravity pin and slide the door fully closed.
- Rotate another 180° anti-clockwise; you should hear the pin fall again.
- Slide the door towards you; the Sonic Screwdriver will fall out. You have now found ALL the tools you need to complete the puzzle.

Now, what to do with this Sonic Screwdriver and the rivet? You'll see that the Sonic Screwdriver is not long enough to use as a key on its own and if you use the rivet to lengthen it then you have no tool to open the second lock. The two locks must be opened at the same time to allow the door to be removed.

- Turn the puzzle another 90° anti-clockwise so the door is facing up at you again.
- Separate the two pieces of the Sonic Screwdriver.
- Each piece has a separate use, but must be used simultaneously
    - Drop the shorter piece, with point down, in the keyhole of the door, drop the rivet in on top of it, and push down
    - The gravity pin you used before will now be used again as part of the other lock to open the door. Push it up into the door with the other, longer piece of the Sonic Screwdriver.
- Remember, these two locks must be operated together; you will now be able to slide the door towards you and completely off its hinges.
    - You may need to close the door ever so slightly to take pressure off the two locks so they can operate freely.

To reset the puzzle:

- Screw the two halves of the sonic screwdriver together
- Insert in the top hole of the door peg
- Place the rivet in the bottom hole of the door peg
- Slide the door onto its hinges, lifting the gravity pin in the bottom of the door at the same time, and the puzzle is completely reset to the starting position.

To assemble the letters inside the telephone box

o	o	o	o
o			o
o			o
o	o	o	o
N	E	E	H
N		E	H
N	E	E	H
N		E	H
N	E	E	H

E	P	L	b
E	P	L	b
E	P	L	b
E	P	L	b
E	P	L	b
x	x	x	x
N	x	x	H
N	x	x	
x	x	x	x

E	P	L	b
		L	
E	P	E	b
		E	
E	T	E	H
N	T	E	H
N	T	E	H
T	T	T	H
T	T	T	H

	P	L	b
	P	L	b
	P	E	b
	O	O	O
N	O	E	O
N	O		O
N	O	E	O
N	O	O	O
N			

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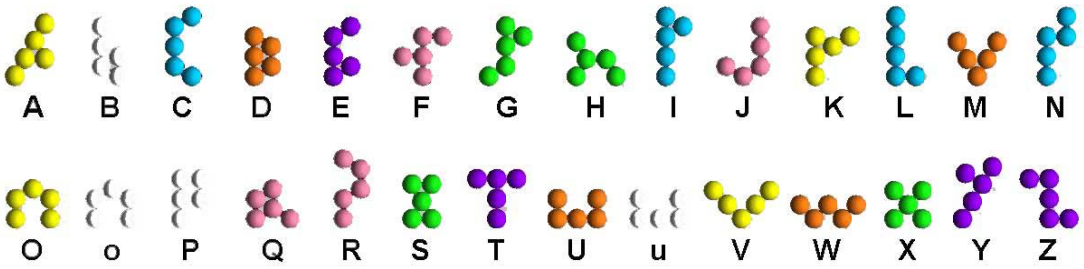
48 The Great Pyramid

Puzzle Goal: **This is a construction kit for 4-level square-based pyramids. The kit's planar pentaspheres can make many challenging 3D assembly puzzles, including the Great Pyramid!**

1. **Remove pieces JNSU, and build four 4-level square-based pyramids together: AGLoWZ, BIKMRT, CPQVXY, and DEFHOu.**
2. **Using all 28 pieces, build the Great Pyramid—a 7-level square-based pyramid.**

Materials: ping-pong balls

Classification: 3D Put-Together



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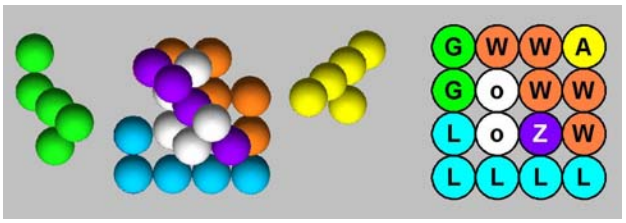
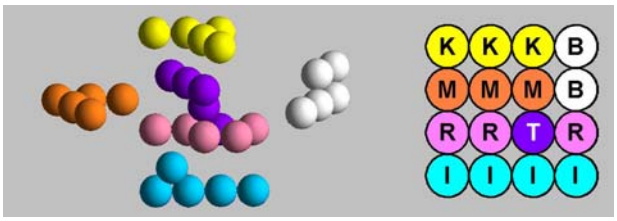
48 The Great Pyramid

Puzzle Solution:

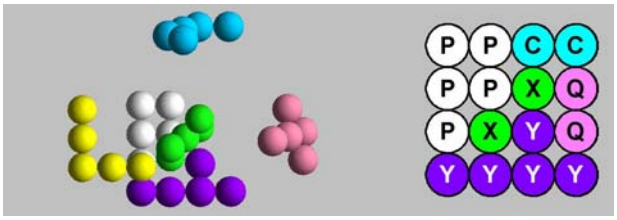
4-level square-based pyramids



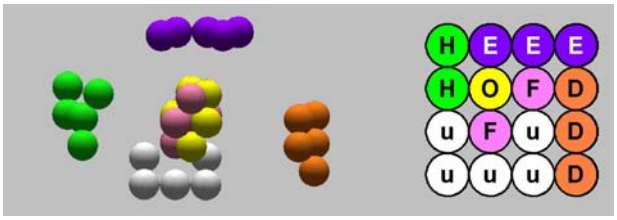
AGLoWZ



BIKMRT

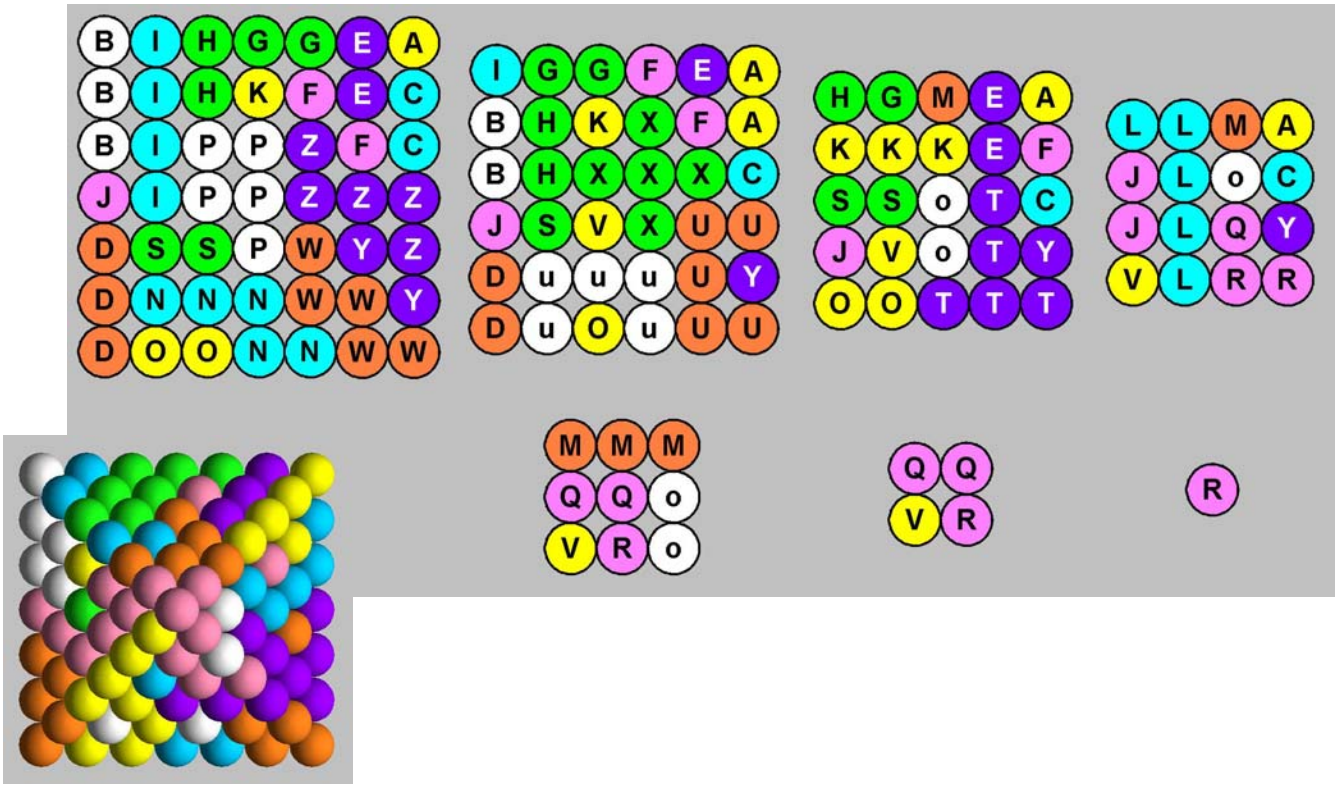


CPQVXY



DEFHOu

The Great Pyramid



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49

Torbus

Puzzle Goal: **To show the relationship between a toroid and an enclosed ring (similar to a Möbius Strip), by rotating the latter 720 degrees.**

Materials: Various laminates, rosewood

Classification: Interlocking

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49 Torbus

Puzzle Solution:

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50

Torbus and Ring

Puzzle Goal: **Separates into three pieces and assemble as two or three interlocked rings.**

Several interlinked configurations of the three rings can be made without first completely unlinking any one ring.

Materials: Oak, steel

Classification: Take-apart

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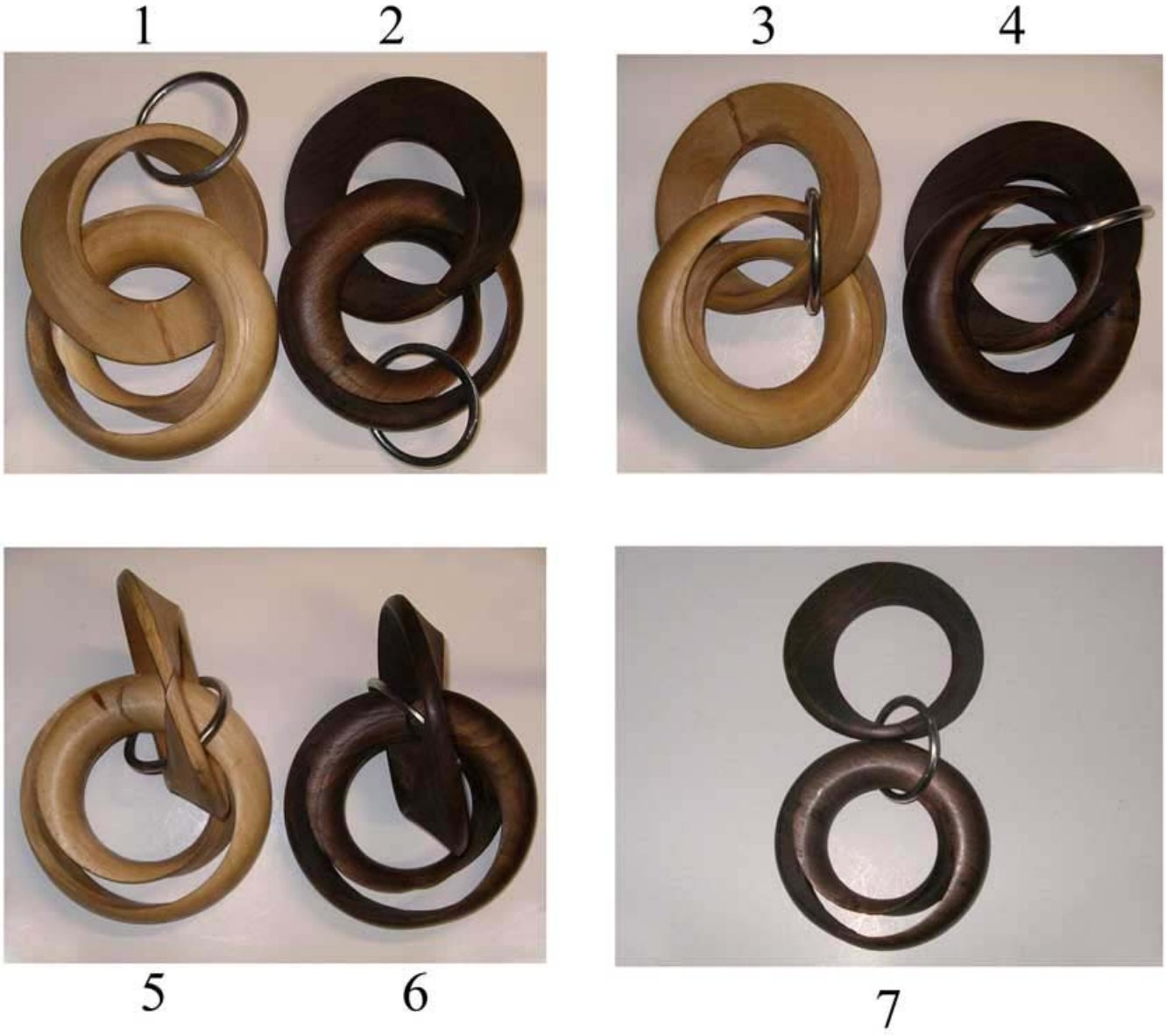
50

Torbus and Ring

Puzzle Solution:



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51

Tornado Burr

Puzzle Goal: **Disassemble and reassemble the 12-piece burr.**

Materials: Magnolia kobus

Classification: Interlocking

Notes: To assemble or disassemble the Tornado Burr, you must twist the group of 4 pieces simultaneously. Also, such a movement should be done for the other group of 4 pieces one more time.

The most important key of the Tornado Burr is the slanted notches. The slanted notches demand that each piece is assembled and disassembled in the proper order. As you can see, the Tornado Burr has very eccentric movements. Try your luck, and stop this fierce tornado.

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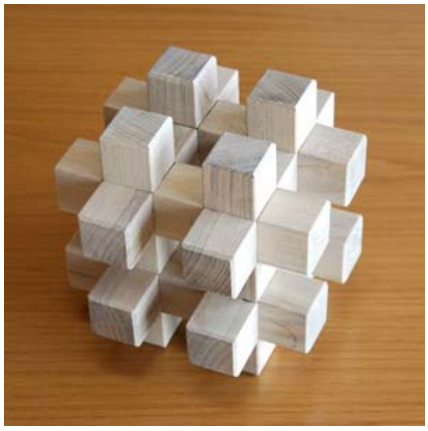
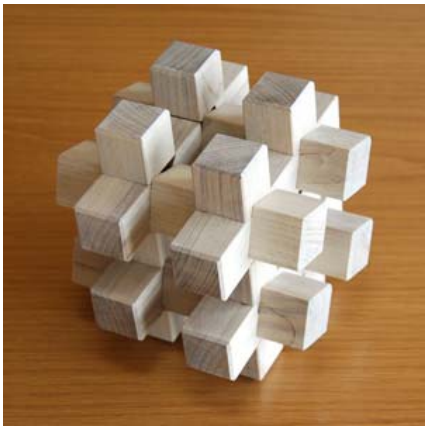
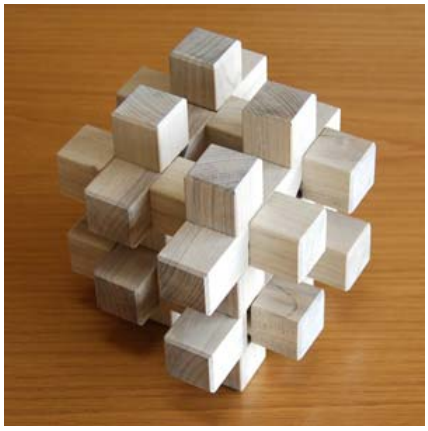
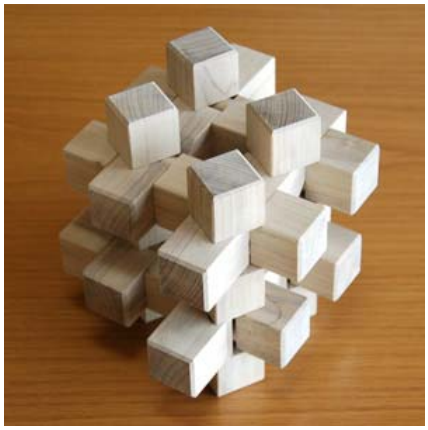
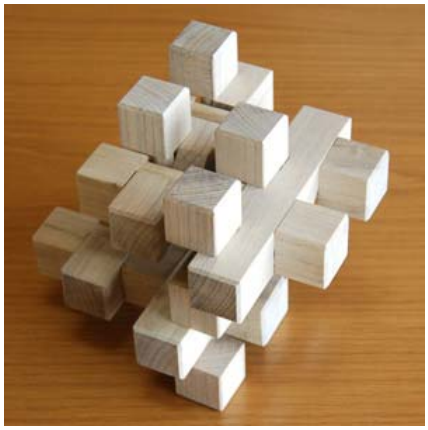
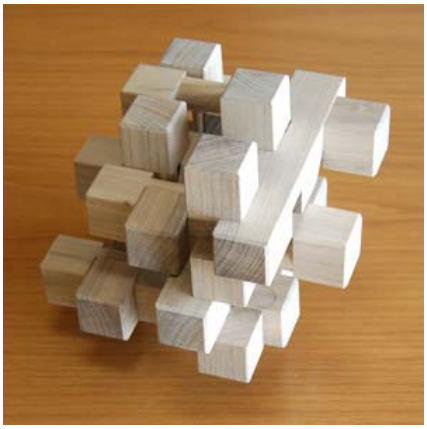
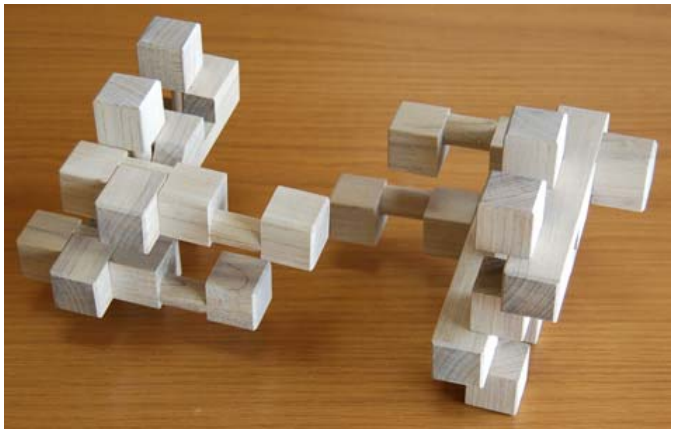
51 Tornado Burr

Puzzle Solution:

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52

Torus World

Puzzle Goal: **Assemble and disassemble the three pairs of interlocking rings.**

Materials: Brass

Classification: Interlocking solid puzzle - geometric objects

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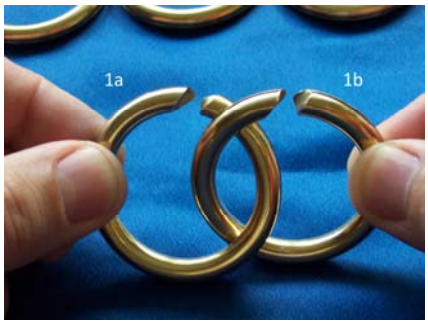
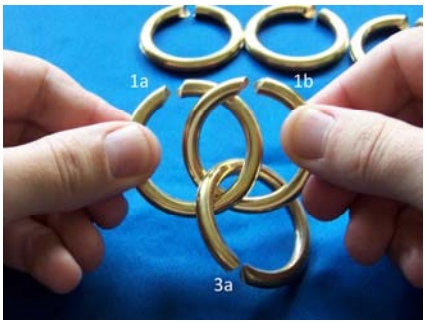
52 Torus World

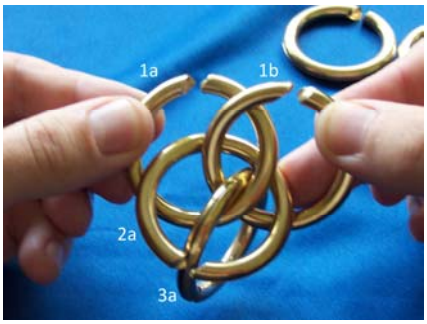
Puzzle Solution:



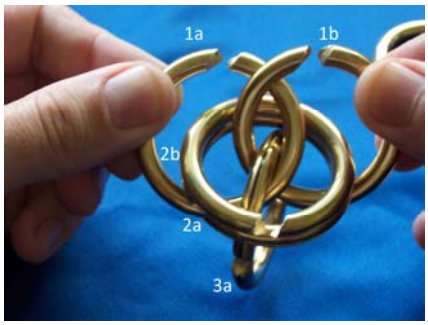
1a-1b (insert ring “1a” into ring “1b”)



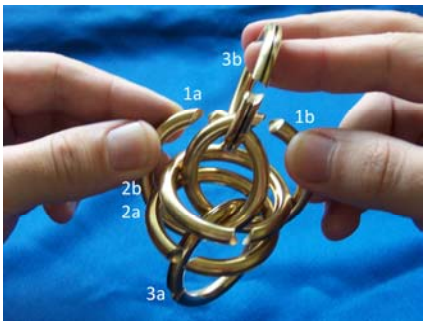
1a-3a (insert ring “1a” into ring “3a”)
1b-3a (insert ring “1b” into ring “3a”)



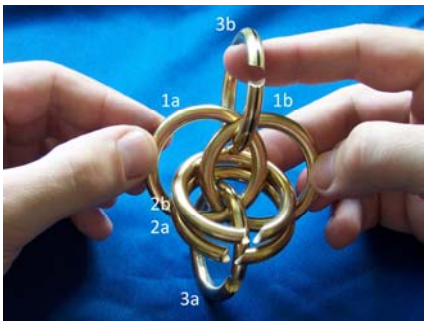
1a-2a (insert ring “1a” into ring “2a”)
1b-2a (insert ring “1b” into ring “2a”)



1a-2b (insert ring “1a” into ring “2b”)
1b-2b (insert ring “1b” into ring “2b”)

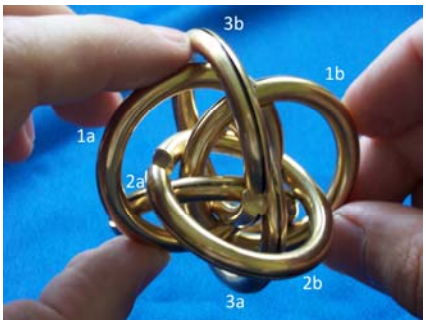


1a-3b (insert ring “1a” into ring “3b”)
1b-3b (insert ring “1b” into ring “3b”)

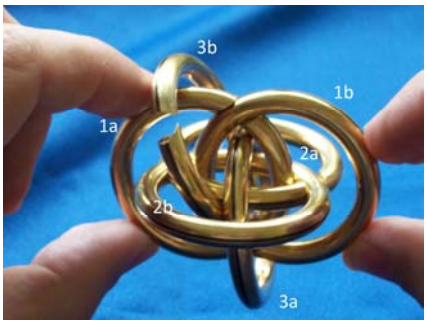


1-1 (assembly ring “1a” and ring “1b”)

3a-2a (insert ring “3a” into ring “2a”)
3a-2b (insert ring “3a” into ring “2b”)



3b-2a (insert ring “3b” into ring “2a”)
3b-2b (insert ring “3b” into ring “2b”)



2a-2b (insert ring “2a” into ring “2b”)
2-2 (assembly ring “2a” and ring “2b”)
3a-3b (insert ring “3a” into ring “3b”)
3-3 (assembly ring “3a” and ring “3b”)

The three pairs of rings now are perpendicular.

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TriangleTrio

Puzzle Goal: **Solve the puzzle in four different ways so that when solved the circles make a different symmetrical pattern each time.**

Materials: black walnut and red alder wood

Classification: 1.1 2D assembly puzzle

Notes: Not all solutions have the same type of symmetry.

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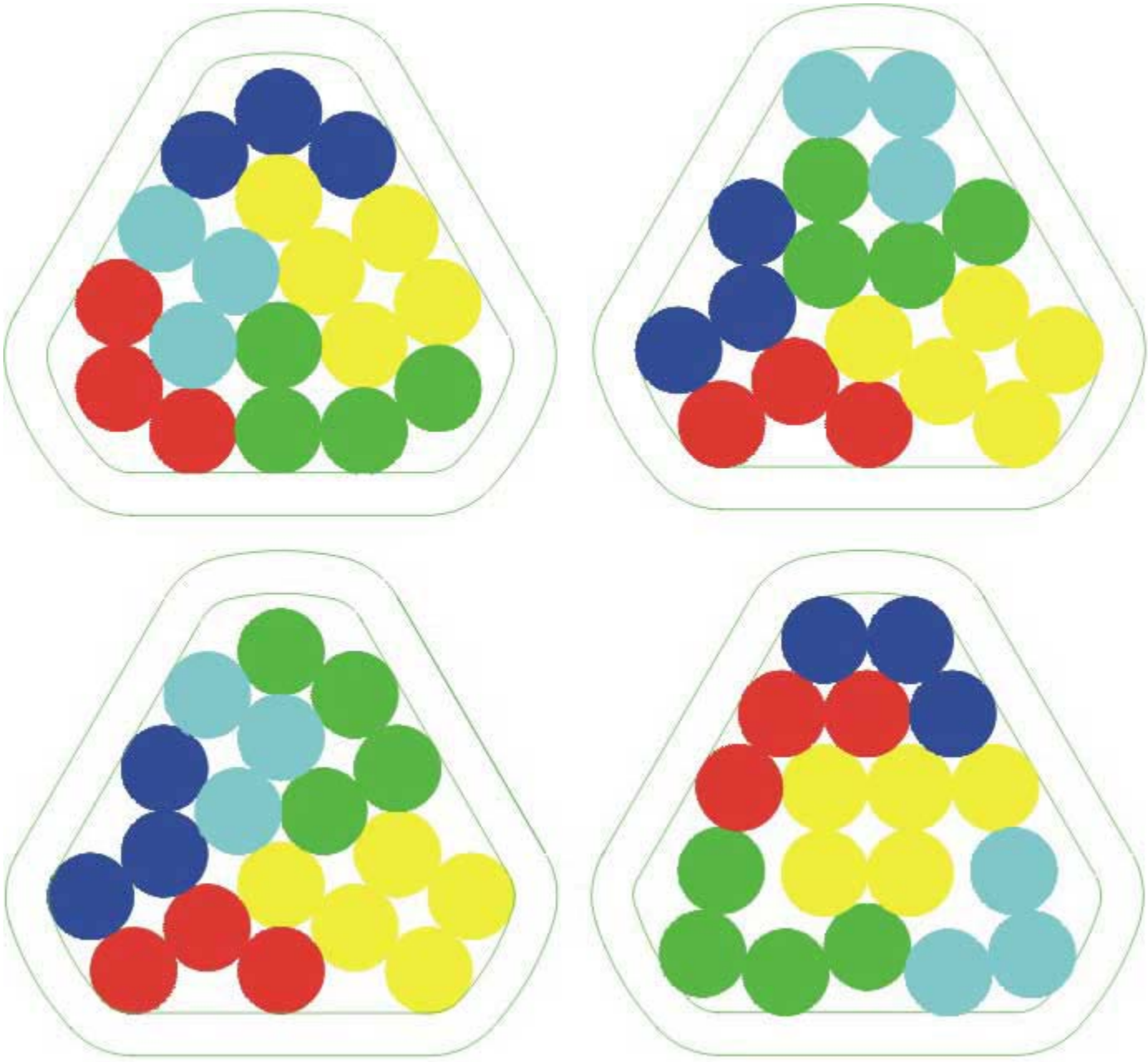
53 TriangleTrio

Puzzle Solution:



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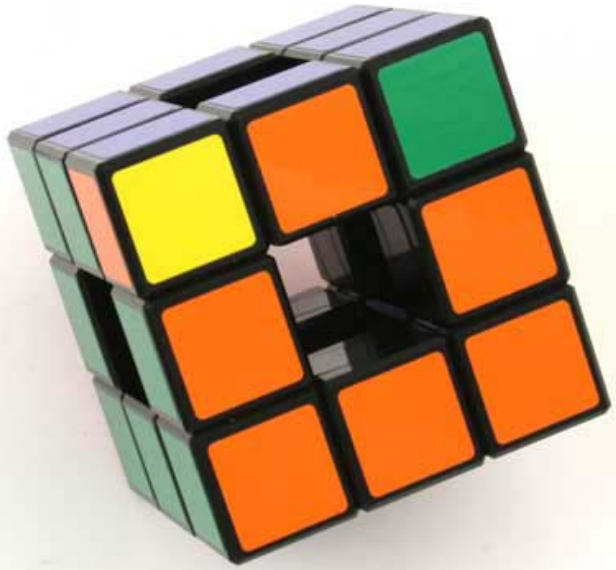
54 Void Cube

Puzzle Goal: **Scramble the cube, and then restore all faces, like Rubik's Cube. In some cases, it will appear that there is no solution to this cube; it is a second puzzle to figure why this happens.**

Materials: ABS resin

Classification: Sequential Movement Puzzles

Notes: There are no center cubes!



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54 Void Cube

Puzzle Solution:

Almost same as Rubik's Cube. However, this cube "breaks" virtually all published solutions since there is no way to correctly orient the cube with confidence.

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Whiz of Oz

Puzzle Goal: **Move all four cubes from the corners of a board to the center, and so that the letters showing on the cubes match the letters underneath them. There are five playing boards.**

Cubes roll from one square to another. The color on the top of a cube cannot match the color underneath it or next to it (except for the goal positions), and the color on any side of a cube cannot match the color of the corresponding neighboring square (note that the color of an occupied square is that on top of occupying cube, not the board square underneath it, making it possible for cubes to work together).

Materials: Wood, cardboard

Classification: Sequential movement

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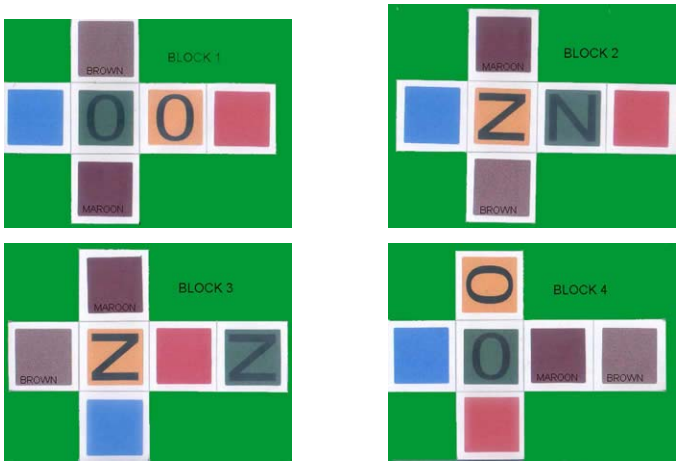
Whiz of Oz

Puzzle Solution:

BOARD 4 - Starting Position and moves:-



BLOCK 1 – starts at F6 (Top - Orange, Facing F5 Red, Facing E6 maroon)

F6, E6, D6, D5 (needed for block 2 to pass C5), D4

BLOCK 2 – starts at A6 (Top Green, Facing A5 Maroon, Facing B6 Orange)

B6, B5, C5 (block 1 must be at D5 as block 2 rolls on and past C5), C4

BLOCK 3 –starts at F1 (Top Green, Facing E1 Maroon, Facing F2 Brown)

F2, E2, D2, D3

BLOCK 4 – starts at A1 (Top Orange, Facing B1 Blue, Facing A2 Green)

B1, C1, C2, C3

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